1 **Introduction** HSC plan of work 1983–84 and onwards

1 This plan of work for 1983–84 and onwards sets out our proposals for future years against the background of our previous plans and reports and in the light of significantly changing circumstances. Our proposals for the next phase of our work should, we think, best be considered by setting them in the context of the progress made in the Seventies.

2 The first five years of recent new thinking about health and safety at work in this country — a phase of inception — stemmed in part from the ideas contained in the report *Safety and health at work*,* which received wide support, and in part from the impetus provided by the passing of the Health and Safety at Work etc. Act 1974 (HSW Act), accompanied by establishment of the new institutions required to implement it — the Commission and the Executive. Taken together with the radical reorganisation of a substantial element of our field force, the Factory Inspectorate, accomplished in 1977 with the broad aim of putting our approach to the development of policies and the execution of inspection and enforcement work on a more specialised and effective basis, by about 1978 the scene had been set for a second, developmental, phase.

3 This second phase consisted of development and implementation of the new ideas and saw us putting into place the major elements of our programmes. Our plans for expansion and development were curtailed in this phase by the country's worsening economic circumstances and the Government's decision that we should share part of the burden of public sector manpower economies. The second phase was completed by the preparation of our plan of work for 1981–2 and onwards,† which took the new circumstances into account and reflected our views about major items of work which we considered should be continued to completion, in broad fulfilment of our aims. The introduction to that plan not only set out our aims, but dwelt upon the factors which we decided to consider when deciding whether to include work in our programmes.

4 The development of health and safety standards and controls is almost always a slow and painstaking business, and must be, if we are to ensure that the views of interested parties have been obtained and properly taken into account and that our proposals are sensible, and capable of implementation and acceptance by employers and workpeople. A number of the projects identified in our last plan are therefore continuing and this latest plan identifies those principal projects which have reached a stage where they can be expected to come to fruition during the next two years. We also indicate the major items where work is in progress but it is too soon to describe their final form or timing, which will certainly be beyond the next two years.

5 By 1983–84 we shall have satisfied the present requirements to reduce our staffing budgets and we expect to enter a new phase, consisting of consolidation of much of our work. We cannot of course be sure about our future levels of resources but for planning purposes we assume that our staffing will remain at a roughly constant level. Nor do we doubt that during the coming period there will be the need not only to consolidate what we have done so far but to remain alert to the changing working environment, to identify the new hazards which are emerging and to respond with action.

6 Above all, we are determined in this phase to maintain and where necessary renew the freshness of thinking that marked the earlier phases of inception and implementation, and to stimulate the promotion and development of ideas at industry and national levels about health and safety, keeping in step with ideas about technological, social and economic change.

7 We are witnessing significant change in the scale and nature of economic activity; notably the rapid rate of technical innovation and a major and continuing shift in employment from manufacturing to service occupations. Most recently, recession, scarce resources and rising unemployment have brought a changed focus and new pressures to our work, raising questions about whether our activities, and those of the Health and Safety Executive, are going to enhance manufacturing activity, and influencing the priority given by some groups of employers and workpeople to improving working conditions, as one objective alongside their wider objective of economic survival.

8 At the same time we have seen improvement in standards of health and safety at work and a heightened awareness amongst employers and workpeople of their individual and collective responsibility for maintaining safe and healthy systems of operation.

9 But in spite of the progress of the last decade, accidents continue to maim and kill, new hazards emerge and the problems of occupational disease continue. These problems remain a blight on our economic life in terms of losses to the individual, lost working time, damage to plant and loss of product.

10 Nor can the pressures of recession and worsening economic conditions lead us to the facile solution of relaxing safeguards and requirements in the mistaken view that we also reduce costs and thereby help industry. The costs and damage of unsafe practice are clear to all who have first-hand experience of industrial activity; cutting corners on safe systems is as uneconomic as bad workmanship or inefficient working methods. The common sense justification for safe systems which derive from managers' and workers' representatives searching for solutions to the real problems they face jointly at their workplaces remains as powerful as any ultimate powers under criminal law which the HSW Act provides; and employers and workers alike realise that.

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* HMSO (1972), ISBN 0 10 150340 7.

† HSE (1981), £3, ISBN 0 71760079 3.

11 We remain a body seeking broad agreement, helped both by our representative nature, which stems from the kind of organisations from which we have been nominated, and the established pattern of consultative machinery and process through which all our work is progressed.

12 Significantly it is our consultative machinery which helps ensure that what we do is the best acceptable solution to the problems we face and that compliance is achieved. We believe the best means of realising our aims must be by winning the support and confidence of all industrial interests and by encouraging awareness of health and safety. Self-regulation through guidance and advice remains a cornerstone of our work. This is evident at the company level in the performance of the functions of managers under the Act, and in the functions we have given to safety representatives and safety committees at the workplace; at industry level, in our network of advisory committees, and the national industry groups of HSE; and in our broad consultative practice when proposing new regulations or initiatives. Taken together at each of these levels, it means that we work only with the support and agreement of those who will be covered by the proposed provisions; and ultimately our own representative basis, which reflects a broad consensus of economic and public life, guarantees that what we propose is sensible, fair and effective.

13 The spirit of our appointment in 1974, and indeed the spirit of the HSW Act itself, was one of courageous and optimistic initiative. Parliament opted for tough legislation with more effective provisions for achieving results and enforcing the law. To keep faith with the intentions of Parliament and the public interest and concern it represents, we continue to accept and carry out our remit under the HSW Act wholeheartedly. We are committed, above all, to the pursuit of improved standards of health and safety, the protection of the individual worker, the protection of our industrial fabric and the protection of the public. These were our aims in 1974 and they continue to be our aims now.

14 The changing nature of economic activity and the acute problems of recession have raised fundamental questions about our activities and, more generally, the role of interventionist policies for health and safety at work. It is worth remembering, however, that the rate of progress in improving standards of protection, whether from major hazards, shopfloor accidents or industrial diseases, is not rapid by nature. We have achieved much in nine years; but the span of our objectives and progress is long and diversion from a path of carefully considered improvements puts the whole achievement of recent years at risk.

15 Our approach to matters of policy as well as to the field activity of the Health and Safety Executive's inspectors has to be one of common sense. In all our activities, we have been acutely aware of the need not to make unreasonable demands on those affected by our decisions on the provisions of the HSW Act. This approach has proved its worth in the severe economic climate of the present and the recent past. The judgment of inspectors in seeking compliance, and our own decisions on broader issues, continue to have due regard to what is reasonably practicable, taking into account the nature of individual cases and, most importantly, the need to secure objectives within the constraints of economic viability. All this has formed and conditioned our fundamental philosophy. Our way forward during the coming planning year and subsequent planning period, which we set out in the ensuing chapters, is firmly rooted in these concepts. We remain with the same responsibility entrusted to us in 1974. Our basic role, as independent assessors and trustees of the provisions and spirit of the HSW Act, equally, remains unaltered.

Objectives

16 It is appropriate to restate briefly our broad objectives for this planning period. They remain:

(a) to fulfil the duties laid upon us by the HSW Act, notably the protection of individuals at work and the protection of the public at risk from work activity. These would be achieved, for example, by:
  - the assisting of employers and workers in improving standards of health and safety (in, for example, the control and safety of hazardous substances and physical agents or the control of emissions into the atmosphere);
  - the provision of information and advice;
  - the effective enforcement of our legislation;
  - the revision and submission of regulations under the Act.

(b) to fulfil duties to the benefit of both sides of industry. Both specific measures and general policies need to balance protection against risk, with cost-effectiveness in implementation. This is achieved notably by:
  - extensive consultation with both sides of industry and other interested parties whilst drawing up new initiatives;

- framing legislation in terms of what is reasonably practicable for employers, workpeople and others to observe;
- advising and helping industry and trade unions to implement safe systems of working as early as possible in the introduction of new processes;
- carrying out extensive research into recognised and potential hazards;

(c) to carry out our work in the most cost-effective and efficient way. Our planning system and the work which the Health and Safety Executive is developing on cost/benefit studies, and the work which will be developed on evaluation, seek to achieve this objective in all our activities.

Priorities

17 It is implicit in our aims and objectives that we establish an appropriate balance between existing work and new initiatives. The need for efficiency and the effective deployment of our own resources together with the practical needs of industry and others affected by our decisions means we must consider the relative importance of the possible areas of action available to us. To this end we established, through experience and planning, factors which help us determine whether an item should be included in our programme. These factors, stated in our last plan, are re-examined and re-affirmed here; they are:

(a) where there is evidence of a new or previously unrecognised hazard;

(b) where new information arises about the scale or nature of known hazards;

(c) where it appears to the Commission that standards are unacceptably low in combating known hazards; (in all these cases the relevant evidence may be information about the numbers of injuries and cases of occupational disease which have already occurred, their severity and incidence, or it may be scientific assessments of the probability that hazardous events will occur and of their consequences – as in the case of a chemical with evidence of carcinogenicity or the risks arising from a major release of toxic or flammable material);

(d) to respond to public concern, both where this is caused by particular incidents and where it has increased progressively;

(e) where action by the Commission will help to put into effect proposals developed by employers and workpeople, through, for example, the Commission's advisory committees, for improving health and safety standards;

(f) to respond to, and where appropriate, seek to change, European Community or other international initiatives, and to stimulate such initiatives where this will help to ensure that realistic and effective health and safety policies can be adopted in this country;

(g) where existing controls have become inappropriate and impede the adoption of sensible health and safety policies, or place undue burdens on employers, workpeople or others, or on the Executive's resources;

(h) where technological change has rendered existing controls obsolete or has enabled more effective control measures to be devised;

(i) to ensure that standards which are widely accepted and applied as good practice are adopted by all concerned;

(j) to meet the needs of employers, workpeople and others for additional information and advice which will help them to combat hazards.

18 In respect of new initiatives the relationship with our overall objectives and application of the above factors are tested by defining closely the specific objectives of the proposed item of work.

19 Although we have set these factors out before, we have decided to take this opportunity of enlarging upon the way we plan to respond to any new health and safety issues which may cause serious public concern (factor (d) above). Our first step must obviously be to discover the facts behind the problem and to determine whether we are really dealing with a new hazard or one which is already receiving our attention. We believe it is right that we should give the public the facts frankly, together with an explanation of the relevant legislative controls and their adequacy to cope with the problem, and our proposals, if we decide that anything further needs to be done (e.g. by improving controls, commissioning research, providing better information, or asking the Executive to carry out an investigative or enforcement initiative through our field force). When we believe there is no cause for concern, we say so, making it clear why we take that view. This is not a new policy; indeed, we have adopted a similar approach on a number of occasions.

20 Earlier we stressed how our policies of extensive involvement and consultation of employers and workpeople helped to ensure that our proposals were both realistic and acceptable. And we have listed the factors which help us decide what to include. One important area they do not cover, however, is the likely cost burdens on industry. Naturally, we feel obliged to ensure that the costs of implementing proposals should not grossly outweigh the benefits, and in these difficult times we are aware that companies are having to cut their spending programmes. Nevertheless, as a regulatory body charged with maintaining and improving standards of health and safety, we must not cease our efforts to identify hazards to health and safety and, in consultation with industry and other interested parties, to develop cost-effective controls.

21 Awareness of the potential costs and benefits is encouraged at all stages of development of a proposed control. Simply, in order to assess the possible costs to employers of a particular proposal, and the cost to society of not proceeding, it is necessary to start preliminary work. The reason for its inclusion in the programme will lie among the ten criteria outlined above. Inclusion does not mean that we proceed regardless of the cost: a proposal which turned out to be grossly expensive in comparison with benefits would not get very far. As work proceeds and the proposals become more refined, our assessment of likely costs and benefits improves in parallel. Then we can decide whether a proposal is worth pursuing, and in what form it should be pursued, taking cost/benefit factors into account (together of course with other factors, such as public concern, and constraints, such as the need to comply with European Directives). Sometimes we would decide to modify or even drop the proposal.

22 Cost/benefit assessment is therefore a technique used by the Commission and HSE to inform their judgment. It is used at all stages during the development of our proposals, to help to ensure that they are realistic and capable of acceptance and implementation by employers and employees. In order to help the Commission form a view, cost/benefit assessments are carried out by HSE staff acting on guidance and advice which does not, however, represent a rigid body of rules which must be followed without deviation. Each policy proposal has its own peculiarities which are dealt with accordingly as regards cost/benefit assessment.

23 During 1982 we agreed to consult widely on the methodology used by HSE and to invite comments. This consultation is proceeding. The methodology cannot be regarded yet as in its final form, since it will inevitably develop and be refined as we gain experience of using the technique. The consultation document* is available to those interested in the approach to cost/benefit assessment which is currently being used by HSE, and it is relevant to the work we are proposing to do during the period of this plan.

24 However, we should make clear that, in our view – shared we believe by economists – cost/benefit analysis is not an exact science; the measurement of cost and benefits is subject to uncertainty and considerable margins of error in some cases and value judgments are involved at many stages. It is not a calculus which can by-pass judgment, but a technique for assisting it. Consequently, the outcome of such an analysis can be only one of several factors which, together, have to be taken into account by the Health and Safety Commission in judging the merits of proposals for new controls.

25 We should also make clear what it is we are attempting to measure. Generally, the aim is to assess the separate resource costs and benefits of specific health, safety and air pollution controls to the nation as a whole. The resource cost (or benefit) of a control or activity can be defined as the amount of real resources used up (or saved) as a result of that control or activity. If a control leads to a decrease (or increase) in production relative to some base position then this also constitutes a resource cost (or benefit).

26 Assessing the resource costs and benefits of a control is not, of course, simply a matter of calculating its financial costs and benefits as they fall on or to different groups within the community (such as employers, employees and the public purse), and then adding up the results. Double counting and transfers which involve no real savings need to be avoided. And in some cases a health and safety control may give rise to subjective benefits, reflecting real human concerns which resource benefits would not by themselves cover (examples are reduced pain, grief and suffering and a whole range of welfare benefits including provision of washing facilities and reduction of noise and heat). These benefits need to be identified, if they are likely to occur; while it will not generally be possible to quantify them, this does not mean that they should be overlooked.

27 It should go without saying, of course, that the proposals for legislation and approved codes of practice, standards and guidance contained in this plan are being subjected to this sort of scrutiny. Before taking a final decision ourselves as to whether to proceed with a particular proposal – remembering that in many cases Ministers make the final decision – our consultative processes enable us to consider any comments from elsewhere which may, and often do, lead to a revision of our estimates. But we reiterate that, in our view, cost/benefit assessment is merely a technique allowing us to come to certain conclusions to be weighed with other factors, in a process which must ultimately rest upon judgment.

28 In the remainder of this introductory chapter we explain how our programme of work has to be tailored to the problems facing us. Each year getting on for a thousand people are killed in accidents arising from work activities within our field of responsibility. A probably much larger number of people have their lives significantly shortened by industrial diseases and accidents. Tens of thousands of fairly serious accidents occur and hundreds of thousands of minor accidents. Tens, and probably hundreds of thousands of people suffer some longer term damage to their health through such things as lifting, noise and toxic materials. These injuries arise from a multitude of separate causes. We have to tackle, therefore, a very wide range of problems if we are steadily to bring down the number of people injured and to prevent new causes of injury arising. It is for this reason that our programme of work inevitably consists of a large number of projects each dealing with a particular cause of injuries. It would not be helpful to concentrate our resources on a small number of projects. Nevertheless there are certain major areas in which we shall be putting more effort over the next few years and it may be helpful to pick these out.

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* Cost/benefit assessment of health, safety and pollution controls. HSC (1982), £2, ISBN 0 7176 0107 2.

29 The hazards with which we have to deal fall into three main groups.

1 Hazards which lead to immediate physical injury (in particular machinery accidents, transport accidents and falls). A great deal of information is available about these events and a substantial volume of detailed legislation has been produced prior to the HSW Act.

2 Hazards which result in damage to health resulting either in early death or permanent damage to health. (The main factors here are toxic chemicals including carcinogens, noise and vibration and probably the handling of heavy loads.) By their very nature information on these injuries is poor and comprehensive legislation has not been enacted.

3 Events with a low likelihood of occurrence but potentially disastrous results. (These range from major explosions and releases of toxic chemicals, including major releases of radioactive substances from nuclear installations, to major transport accidents.)

30 We set out below the main elements in our programme related to these three types of problem.

General organisation for health and safety

31 Some of our projects do aim at improvements which would be likely to have a favourable effect on all three types of hazard. These are concerned with the way in which organisations structure themselves to handle health and safety problems in general. Some of our early important legislation was concerned with such matters; the Safety Representatives and Safety Committees Regulations; the provisions for employers' safety policies. Over the next few years we propose to increase our effort in this general field and in particular:

(a) to increase the amount of time which our field staff spend in the evaluation of the health and safety systems of those firms and public bodies which are large enough to make organisation a critical factor;

(b) to devote more effort to the improvement of the quality and quantity of health and safety professionals (safety officers, hygienists, occupational doctors and nurses).

32 In addition we shall be paying particular attention in all new regulations to requiring an effective organisation for handling a particular hazard rather than seeking to lay down in detail the way to cope with a particular hazard.

Events leading to immediate injury

33 The main problem with this type of hazard lies not in a shortage of existing legislation but rather in the fact that much of the older detailed legislation is outdated by technological change. Many existing regulations are therefore either irrelevant to current problems or in some cases an actual obstruction to effective health and safety control.

34 There are certain areas in which we do need an up-do-date regulatory framework. The areas we shall be concentrating on in the next few years are:

(a) *Legislation in relation to coal mines* A substantial programme of updating and simplification is in hand – described in the Appendix.

(b) *Docks* The existing regulations are technologically outdated and must be revised and integrated with the Department of Trade's programme of new regulations concerning ships and seamen.

(c) *Electricity* The present regulations date from 1908 and need bringing into line with current standards and practices.

(d) *Flammable and explosive substances* A comprehensive framework for the control of the production, transport and use of these substances.

35 In relation to hazards of this type, however, our main effort will be devoted to identifying new problems arising from technological change and ensuring that adequate codes of practice and guidance are available.

Hazards resulting in acute or long-term damage to health

36 Existing legislation in this field is fragmentary and deals with particular substances which were found to be causing serious health risks. Over the next few years our aim is to put in place a comprehensive general framework for control of these hazards. The most important features of this are:

(a) *Toxic chemicals* General controls over the production and use of toxic chemicals decided in consultation with other bodies. This includes our work with the Department of the Environment on notification of new substances, assessment of their properties and risks to health, and development of appropriate standards and controls.

(b) *Radiation hazards* A comprehensive framework for the control of these hazards.

(c) *Noise* A comprehensive programme for the protection of hearing.

37 We shall hope to have this legislative framework largely in place within the next four to five years. It will provide a basis on which codes of practice and guidance can be developed for particular substances or particular problems.

Major hazards

38 The third category of hazard for which we must have an effective programme is that of low probability events which have a potential for disaster. These include:

(a) *Nuclear installations* As far as nuclear installations are concerned we have a comprehensive framework of control and do not anticipate the need for substantial legislative change. Our priorities in this field in the next few years are:

(i) the continuing evaluation of the design of the pressurised water reactor (PWR), if it is decided to go ahead with it;

(ii) the ongoing monitoring of safety in the fuel-reprocessing installations of BNFL.

(b) *Other installations giving rise to hazard* As regards other types of hazardous installations we need to put in place a system of control based on the European Community Directive on the Major Accident Hazards of Certain Industrial Installations, and at the same time to develop systematic guidelines for siting and operation.

(c) *Transport of hazardous materials* Finally we need an effective framework of control over the movement by road, rail, water and pipelines of large quantities of hazardous materials.

39 In the Appendix we set out in some detail information about specific projects related to all these programmes, with objectives, timescale and justification.

40 In the following chapters we give an account of the areas of work which are of fundamental importance to all our activities or to which we shall be giving particular attention during the planning period:

Chapter 2 sets out our resource needs and implications of our planned activity together with the implications of possible cuts in some resource elements.

In *Chapter 3* we present our plans for our field force in their work on compliance activity.

Chapter 4 examines the work of research and hazard assessment, *Chapter 5* that of our information activities.

In *Chapters 6 and 7* we consider three important topics for this planning period: international commitments – and the activities they provoke; legislation – our progressive revision and replacement of existing legislation by a coherent body of new regulations; and finally 'initial integrity' – notably the approval of industrial standards as a basis for compliance.

2 Resources

The balance of resources

41 In 1979/80 we had to carry out a fundamental review of our programmes in response to the Government's request for manpower economies in the Civil Service. Having done this, we laid plans early in 1980 to meet the 6% salary-related cut required of us by 1983/84, which produced projected staffing levels, and in 1981 we considered how to meet the additional cut of 150 posts required of us by 1983/84. During the period HSE has also been subjected to the effects of squeezes caused by central pay settlements exceeding the sum allowed for them in cash limits and being proportionately greater for higher-paid staff. Our average salary cost has moved higher, relative to the Civil Service as a whole, because of the substantial proportion of professional staff the Executive needs to employ for the performance of our functions.

42 The financial and manpower resources made available to the Commission are used largely to support the inspection, enforcement and advisory programmes which are performed by the Executive's 'front line' inspectorates. These are discussed in detail in Chapter 3. These not only require direct office support but also central personnel, finance, information and library services and some laboratory support including testing and research work. As a result, not only is 55% of the available finance required for salaries and 25% for general administrative expenses, but other expenditure on goods and services, including capital expenditure, is in some respects staff-related. Over the years 1983–84 to 1985–86, during which dispersal of a large part of the headquarters of the Executive to Bootle is to take place, normal patterns of employment and spending will be distorted.

43 The cash to be made available to us over the period of this plan, i.e. the Public Expenditure Survey Committee (PESC) provision, includes Treasury-determined percentage increases for future inflation. Only if these are realised will a constant volume of activity be possible throughout the period. Our present PESC provision (including salary costs for dispersal – see para 55) is shown in Table 1:

Table 1 Current PESC provision for HSC/E 1983–86

	£000s		
Description	1983–84	1984–85	1985–86
Salaries	50 722	53 258	55 389
General administrative expenses	22 852	23 997	24 957
Other current expenditure	8 641	9 072	9 435
Capital building	2 816	2 956	3 074
Capital equipment	4 215	4 426	4 603
Gross total	89 246	93 709	97 458
Receipts	–3 194	–5 354	–5 588
Net total	86 052	88 355	91 870

Staff

44 Our present staff numbers of about 3700, excluding additional staff for dispersal, will be maintained throughout the period of the plan (our staff will number only about 200 more than the 3500 that were transferred to HSE from the departments which had had responsibilities for health and safety before the HSW Act came into force in 1974, bringing another 6 000 000 workers within the scale of health and safety controls).

45 The balance of the use of these resources between principal functions is outlined in Fig 1.

46 In Chapter 3, which deals with our programmes to secure compliance, there is further discussion of our proposals for the allocation of resources to field work.

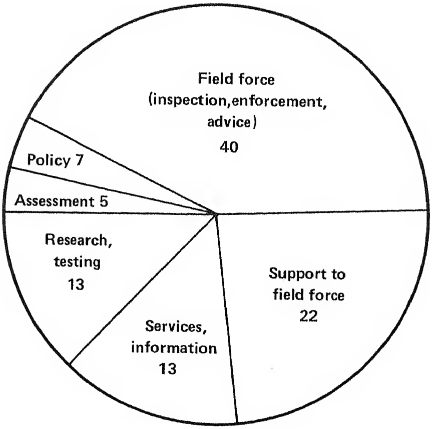

Fig 1 Allocation of staff by function (%)

Salaries

47 Pay awards to particular groups of specialist staff such as the nuclear inspectors and mines inspectors, although not reducing the resources available, will reduce the volume of other staff those resources are sufficient to pay (particularly if, as described below, we manage to recruit more of those specialist staff). Unless this pressure is relieved the planned staff levels will not be able to be maintained throughout the period of this plan.

Recruitment

48 Because of financial and manpower constraints it has been possible to recruit only a few specialist professional staff and essential clerical and other staff to offset some of the wastage and retirements of recent years. These constraints have prevented us from recruiting sufficient inspectorial and professional staff to prevent the structural imbalance that is developing in some of the inspectorates. In addition to inspectorates of mines and quarries and of nuclear installations, we shall be endeavouring to recruit specialist factory inspectors. The possibility of recruiting general factory inspectors and agriculture inspectors in 1983/1984 will be kept under review, but if we remain unable to recruit young inspectors, over the years considerable personnel and organisational problems will occur.

General

49 Although planning for the level of staff-related expenses to remain constant, we have asked the Executive to ensure that any practicable economies be made. While any cash released would not be directly available for staff salaries we hope that it will be permitted to redeploy the savings here to other priority programme areas.

Other current expenditure

50 Expenditure under this item is for:

Non-capital equipment, stores and maintenance:	15%
Extramural research:	25%
Extramural scientific support:	40%
Agency arrangements for inspection and enforcement:	20%

51 For 1983–84 about 60% of the extramural scientific support is for the Nuclear Installations Inspectorate work on the PWR system and the public inquiry. As this work is completed the resources released will be used to meet other areas of concern to which at present we are having to give less priority.

Capital building

52 There is a continuing programme of updating the Executive's laboratories at Buxton and Sheffield and by the end of 1986 it is hoped that the facilities now available at Cricklewood will have been moved to new purpose-built laboratories at Sheffield. This concentration of the laboratory work at two sites (rather than three) will allow some economies in support services, encourage cross-fertilisation of ideas and allow work to develop in a way which is not possible with the present cramped facilities at Cricklewood. The plan also provides for major refurbishment of our London HQ to meet the changed requirements of the organisation following dispersal of the major part to Bootle.

Capital equipment

53 Much of the scientific equipment used in the laboratories and by the field inspectorates is at the forefront of rapidly developing technologies. The main requirements are to identify and measure quantities of substances quickly and accurately, to detect faults, to measure noise and vibration and, when necessary, to provide acceptable evidence for the courts in legal proceedings. For these reasons new, improved, equipment is required and systematically budgeted for. We also include provision for increasing the use of computers and computer-related systems, both for scientific and administrative purposes.

Receipts

54 About 60% of our receipts are from fees for issuing licences to and monitoring licensed nuclear sites, 20% from testing and certification work by our laboratories and 10% from the sale of publications. The balance is from miscellaneous sales and other receipts.

Dispersal

55 The Public Expenditure Survey (PES) provision for general administrative expenses for dispersal is shown in Table 2:

Table 2 Administrative expenses incurred for dispersal (£000)

1983–84	1984–85	1985–86
1941	2037	2119

56 During the period under review the transfer of part of our headquarters to Bootle will be undertaken under the Government's dispersal programme. This will be a disruptive period with effects on our efficiency, some permanent, as we shall have our headquarters split between London and Merseyside. Much effort has already been put into planning the move and steps will be taken to ensure that the effects on our efficiency are minimised. The programme calls for the first phase to occur in about mid–1983 and the second in 1985. Timing depends on the availability of accommodation and staff moves will be arranged to keep organisational disruption to a minimum. We recognise that good communications are essential to minimise the inefficiency of operating a split headquarters. A study has been undertaken of telecommunications needs with the result that a new telephone exchange at Bootle, facsimile transmission of documents, and audio conferencing facilities in Bootle and London are planned.

Improving effectiveness

57 We will continue to look for improvements in the ways we put our resources to use. Staff – and their expertise – are our major resource and we have a very high proportion of professionally qualified and specialised staff (necessarily so in order to carry out our statutory functions). During the past three years the need to reduce our staffing levels in order to remain within our reducing staff budget has raised difficult questions about where to make savings. A planned programme of staffing surveys was established and these will continue in 1983/84, enabling us to ensure that we are making the most effective use of staff, taking account of the needs of the organisation and bearing in mind that another step that has been taken is to co-locate our field staff in our 21 Area Offices, wherever this is a practicable proposition. There are operational advantages in doing this, not least the unified management of supporting staff for the inspectorates and the Employment Medical Advisory Service (EMAS), and the economies of scale that result. The co-location programme is nearing completion and most outlying offices that remain are essential for operational purposes; but some rationalisation is still possible and will proceed over the next two years.

58 The use of new technology will be extended during the planning period, not only with dispersal in mind. Microcomputers and word processors have already been introduced and have already proved their worth in improving efficiency. The computerised data base for storage and retrieval of information about establishments (SHIELD) is being developed both as a source of health and safety data and as a management tool, for example in the planning of programmes of inspection.

59 We intend to continue with selected scrutinies on the 'Rayner' model. The current scrutiny of the use of information about accidents and diseases will bring forward recommendations for changes which will have to be considered in 1983, and it is likely to be followed by a further stage of examination of ways of improving the effective use of other sources of information about health and safety risks in specific establishments and in industry generally.

60 We also propose to continue our annual scrutiny of running costs, which we had introduced in advance of the Departmental scrutinies (but in which we also participate). This detailed breakdown of expenditure, and comparison with the previous year enables action to be taken to reduce costs where practicable and to make better use of financial and manpower resources. The programme of internal audit of financial arrangements and procedures will of course be maintained on our behalf by the Executive's team of auditors.

61 In 1981 we carried out a reorganisation of our planning arrangements so as to combine the preparation of our annual plan of work with financial and manpower and other resource planning, having introduced in 1980 a new system of planning and budgetary control. This enables the Executive, on our behalf, to allocate provisional budgets for planning purposes and bring together a set of divisional plans to fulfill our overall objectives for the different programmes described in this plan of work. These plans form the basis of our estimates, which we consider against our objectives and priorities and approve before submission to the Secretary of State for Employment in the autumn. Once our estimates have been confirmed, they are converted into operational budgets and the budget holders, at Under Secretary level, become responsible for implementation of our plans within the budget allocated. To do this they are provided with regular management information.

62 This system, based on management accountability, also enables the Executive, on our behalf, to monitor progress with the plans, both by the receipt of financial information comparing performance with the planned profile of spending, and by periodically assessing achievements against the agreed target dates contained in plans, and thus identifying what scope exists for recommending to us consideration of changes in resource allocations to programmes. Such changes tend of course to be at the margin and usually need to be accomplished gradually over several years. But we have found this to be an effective system both for allocating resources to programmes, and monitoring progress.

63 We are also developing a methodology for evaluing the results of our activities. In Chapter 3 we discuss some of the problems surrounding this, and the need for more statistical and other information. SHIELD is beginning to provide this but a reasonable run of data will be required before firm conclusions can be reached, and as we explain in Chapter 3, this may amount to data collection over many years for certain types of accident, or even over several decades in relation to certain health hazards. Wherever possible, of course, account will be taken of existing data. Within the Executive's planning branch a unit has been formed both to develop methodology for evaluation and to lead evaluations of areas of our work. This will include identification of any useful performance indicators that can be used to assess health and safety policies in areas where meaningful data about accidents or diseases are not abundant.

64 We are conscious too of the need to keep our organisational arrangements under review. Closer integration of the Explosives Inspectorate within the Factory Inspectorate has recently been achieved and the Executive is now reviewing the scientific field support services to the inspectorates, with a view to rationalising their analytical work and providing a more effective service.

65 Finally, we stress the value of staff training in bringing about improvements in the effectiveness of our staff generally; and the Executive develops an annual training plan to meet the varying needs of the different inspectorates and divisions. This takes account not only of the necessity to keep staff up to date on new developments and technology, but also of the need to train staff to take on management responsibilities and to improve the quality of decision making. About 3% of our staff-related budget directly relates to training.

3 Compliance, advice, inspection, enforcement and safety assessment programmes

Introduction

66 In this chapter we seek to explain our approach to planning the work of the inspectorates (including the agencies performing work on our behalf), the field forces of the Employment Medical Advisory Service, and the staff within HSE carrying out safety and health assessment work (for example, the detailed assessment of existing and future nuclear reactor systems by the Nuclear Installations Inspectorate, and of industrial installations and sites presenting major risks to workers and surrounding populations by the Major Hazards Assessment Unit). We describe the broad programmes of inspection, enforcement and assessment, and look in some detail at the programmes of individual inspectorates and units; the objectives of these programmes are identified and related to major items of work, showing how priorities have been determined and resources allocated for accomplishment of tasks. These may sometimes be projects to which a timescale for completion can be attached – for example, the licensing of a new nuclear power station – or sometimes they will be longstanding and continuous commitments, part of the routine performance of regular visits to workplaces to ensure that basic health and safety requirements are being observed.

67 The methods we use and the problems we experience in assessing how successfully our objectives have been met, are also considered.

68 The work of the inspectorates (the Agriculture, Industrial Air Pollution,* Factories, Mines and Quarries, and Nuclear Installations Inspectorates) together with their scientific field support services and other supporting units, and the work of the field force of the Employment Medical Advisory Service, include many kinds of activity: inspections, advisory visits, licensing and safety assessments, investigations, enforcement actions, legal proceedings, lectures to groups of employers or workers' representatives, discussions at every level – workplace, company and industry – participation in conferences, and so on. The sheer volume and variety suggest to us that it is unlikely to be helpful to attempt to convey a comprehensive project-by-project, industry-by-industry, plan of these activities to those who are interested in our work. Considerable information is to be found about them in the various reports that we publish,† and, although possible, we think it would be artificial to attempt to describe these various strands of activity as if they were quite separate planned programmes with separate objectives. Collectively, they are means to a single end towards which we are constantly striving: the promotion of health and safety at work, and the protection of the general public and the external environment.

69 In helping to achieve this end the programmes operate and inter-relate closely at workplace, company and industry levels. In fulfilment of our regulatory functions they relate with other programmes in our plan of work. In some instances they will be a means towards implementing policies which are already well established or have recently been formed, in consultation with both sides of industry (with which our field force is in daily contact). Or they may play an important part in assisting in the development of new policies by providing information about hazards and ideas about their control. These ideas will usually have been forged in conjunction with managers and employees' representatives at workplace, company or industry levels. The work of the inspectorates has been organised to operate effectively at all of these levels and we regard it as integral with and essential to the Commission's overall plan of work.

70 Although we are conscious of the importance of the work of local authorities as enforcing authorities under the HSW Act, we have not included a description of their activities in this chapter. The resources used by local authorities for this purpose are not provided by us. Nevertheless, through the representations made to us by those of our members who represent local authority interests, we endeavour to ensure that our general objectives, which are outlined below, will be acceptable to local authorities in their roles as both enforcement authorities and employers subject to the HSW Act. Enforcement difficulties experienced by local authorities and common approaches to enforcement are discussed at a national level within a liaison committee with local authorities which is maintained by the Executive, and at a local level by inspectors who are appointed to liaise with those local authorities in their particular areas.

General objectives

71 Our main objective is laid down for us in Section 1 of the HSW Act and is simply to ensure the health and safety of persons at work, and persons who may be affected by the work activities of others. As indicated, this is achieved by a wide variety of activities undertaken by the inspectorates and other staff engaged in health and safety assessment work. Each of these activities has a particular objective which contributes to our overall goal and, although these necessarily inter-relate and frequently overlap, we propose for the sake of clarity to deal with them separately.

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* As from 1 January 1983 this is the new title of the former Alkali and Clean Air Inspectorate.

† A comprehensive list of HSC/E publications is to be found in the Publications catalogue. HMSO (1981), £4.50, ISBN 0 11 883440 1.

Objectives of the field force

72 The inspectorates are the enforcement arm of the Health and Safety Executive, which is distinct from the Commission in being charged separately (under Section 18 of the HSW Act) with responsibility for making adequate arrangements for enforcement of the Act. The inspectorates' primary objective is to ensure that employers and the self-employed take effective action to achieve compliance with the general duties of the Act and with the requirements of the relevant statutory provisions. Inspection of workplaces, one of their main tasks, will lead to enforcement action where that is necessary to raise standards of compliance. But this programme also enables inspectors to assess the competence of management and employees in dealing with the risks arising from their activities, to offer advice or information as appropriate, or to refer problems to specialists in HSE for assessment, research or the development of guidance for the industry concerned. In some cases the problem may be sufficiently serious to justify control by new legislation or through the approval, by the Commission, of an appropriate code of practice after consultation with both sides of industry.

73 For all those reasons, the Commission attach considerable importance to the inspectorates' programmes of work. Their broad objective continues to be securing compliance, and we have agreed with the Executive that their efforts should be directed to the following tasks in achieving that objective:

(a) undertaking inspection of work activities at workplaces, monitoring standards of health and safety performance and assessing the quality of organisation and arrangements for health and safety at individual workplaces;

(b) providing advice for employers, employees and members of the public;

(c) investigating serious accidents and cases of occupational ill health;

(d) remedying complaints from employees and members of the public;

(e) enforcing appropriate health and safety legislation through advice, persuasion, the use of enforcement notices and, where necessary, prosecution.

74 The main objective of the EMAS field force is to ensure the availability of an advisory and consultancy service to employers, workpeople, trade union and occupational health practitioners, as well as to the HSE inspectorates, on all aspects of occupational health.

Objectives of safety assessment activities

75 The HSE's 'assessment' work, as distinct from 'field' inspection and advisory activities outlined above, has its own set of objectives that we have drawn up with the purposes of the Act in mind. For work concerned with potentially catastrophic occurrences resulting from unsafe design, construction, operation and maintenance of plant, or unsafe storage or transport of hazardous materials, we define the objectives in these terms:

(a) to identify and assess risks arising from existing or proposed nuclear plants and notifiable installations with major accident hazards (including their design, construction, siting, operation and maintenance) with a view to the achievement of acceptable levels;

(b) to advise other authorities who also have responsibility for these installations (e.g. local authorities and Government Departments);

(c) to prepare and implement policies for siting of nuclear and notifiable installations with major accident hazards.

Objectives of industrial air pollution control

76 Another important function, embracing both inspection and enforcement in the field, and assessment of plant, is the control of industrial air pollution performed by the Industrial Air Pollution Inspectorate (see para 68). Its primary objective continues to be the effective regulation of this form of pollution. Within that general objective there are two main aims: the achievement of improvement where necessary at existing works and the development of controls for new processes, all within the concept of best practicable means.

Priorities

77 The objectives identified relate closely to our criteria for including work in our overall programme, which we have set out in Chapter 1 of this plan. We have agreed with the Executive that the work necessary to achieve these objectives needs to be given high priority; the degree is evident from the high concentration of professional effort and the very large share of the HSE's staff-related budget devoted to their achievement (these long-term programmes absorb about 60% of the staff budget; we deal with resource allocation in more detail later in the chapter).

78 The assessment of priorities within these programmes is a complex business which is only partially assisted by the statistical, scientific or other forms of information available to us. The hazards we are dealing with vary considerably both in kind and

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degree. Accidents resulting in injury or death are obvious enough, though their causes – and thus their prevention – may not always be immediately apparent and may be rooted in such diverse factors as defects in design, construction or maintenance of plant, inadequate training, systems of work, and so on. Less obvious are the hazards of health impairment from exposure to toxic substances, radiations, or noise – in some cases the effects may take a long time to show up and may not be entirely attributable to occupational causes. At the extreme we are dealing with hazards which might lead to major catastrophes, where the risks of occurrence may be very low but the consequences could be very serious; society's tolerance of this kind of hazard, especially in the nuclear field, is low and we are under political and public pressures to devote considerable effort to reducing the risks even though they may already be very low.

79 Much has already been achieved in accidents involving machinery and plant and, while accident rates involving this kind of risk must continue to cause us concern, we believe that more is being done now by industry to find its own solutions to the remaining problems, helped and encouraged by the recently established National Industry Groups of the Factory Inspectorate, by the establishment of safety committees and the appointment and training of safety representatives, and by our advisory committees. We seek to achieve a switch in emphasis from the pre-1974 'official' workplace inspections on which many companies tended rather passively to rely, to a more active, self-searching approach by employers and workpeople encouraged by our inspectors at workplace, company and national levels of industry. We intend maintaining our policies towards fostering this new 'self-regulating' approach which was envisaged by the Robens Committee. One consequence of this has been that we have been able to shift some of our limited resources within HSE to deal with some of the more intractable health and safety problems.

80 Finally, we will continue to give priority to the work of assessment of major hazards involving potentially catastrophic risks. This, of course, includes the work of the Nuclear Installations Inspectorate and the Major Hazards Assessment Unit (discussed in a later section of the chapter).

Inspection, enforcement and advisory programmes

81 The measures taken by the inspectorates to achieve the objectives we have set them and to improve levels of compliance with health and safety legislation consist very greatly of the provision of information and advice (concerning both technical matters and organisational arrangements for health and safety which may need improvement), and the use of persuasive skills. We endorse this constructive approach and wish it to continue. We also recognise that inspectors need to adopt stronger enforcement action to achieve improvements in compliance in particular cases. We have issued policy guidance to enforcing authorities from time to time and expect this guidance to be helpful in the exercise of their enforcement functions. Having established the broad strategy behind the inspectorates' programmes of work (as discussed in this chapter), we consider it is the function of the Executive, as a statutory enforcement authority, to implement our policies through the detailed planning of the inspectorates' operations. Furthermore, we do not interfere with any enforcement action taken by the Executive in any particular cases; indeed, Section 11 of the Health and Safety at Work Act specifically forbids such involvement by the Commission.

82 *The Factory Inspectorate* has been responsible since the 1974 Act for a wide variety of work activities in around three-quarters of a million workplaces. Because of the reduced volume of activity in some areas of industry a proportionate reduction in the volume of our visits might not seem unreasonable, but staff reductions have resulted in longer periods between visits and some workplaces will now receive no regular visits at all and small businesses will not receive the advice they need. We believe that the Inspectorate is right to try to maintain a substantial proportion of its basic inspection programme. As announced in our previous plan of work, the Inspectorate will continue to apply about 50% of its effort (measured in terms of the time general inspectors spend in the field) to primary inspections and related work at workplaces which have been selected on the basis of an assessment of the overall level of risk to health and safety, made with regard to certain factors. These are:

(a) the present standard of health, safety and welfare in the workplace;

(b) the size and nature of the problems that could arise, whether as a single incident or as a long-term health hazard, considered in terms of employees and of the public at risk;

(c) management's ability to maintain acceptable standards;

(d) the length of time since the previous inspection and the consequent possibility that standards may have deteriorated or that new hazards may have emerged.

83 We consider this a proper way for the Inspectorate to select priorities for inspection and to direct highly trained professional staff towards improving conditions at premises where there are significant risks. We accept that at premises where the risks are lower this means that planned visits will be less frequent. Any other approach would result in a reduced level of effort at the riskier workplaces and would not be acceptable to us.

84 In our last plan we explained that the first rounds of inspection of health service and higher education employers were expected to be completed by 1983 and those for other new entrants by 1985. Until this programme is completed it will not be possible to apply the same risk assessment approach as the Inspectorate applies to other industrial sectors and which we have already endorsed. We therefore continue to regard this work as having priority.

85 The safety record of the construction industry continues to cause us concern. Although the level of activity in the industry has declined as a result of the economic situation, the number of serious accidents remains very high and the number of fatal accidents has actually increased since 1979. We therefore believe that this work should continue to be given high priority and about 15% of the Factory Inspectorate's inspector resources will be allocated to the construction industry, as in our last plan.

86 The remainder of the inspectors' time is made available for the pursuit of the broad objectives we outlined at para 71, and is broken down into a variety of programmes to which no particular priority can be given. These include reactive work, such as investigation of accidents and complaints and satisfying requests for advice and information from employers, trades unions and other enforcement authorities.

87 Special priority is, however, given to the enforcement of Section 6 of the Act, which is concerned with the safety of articles and substances provided for use at work. This enforcement work relates closely to the programme of work concerned with identification of standards which may have relevance to health and safety and which are discussed in paras 170 to 197.

88 The work of the *Agriculture Inspectorate* closely parallels that of the Factory Inspectorate and the approach and priorities for the planning period are much the same. However, the high fatal accident incidence rate compared with manufacturing industry, and the numbers of accidents to children and the self-employed, are extraordinary to this industry and influence our decisions about where to concentrate effort.

89 The inspectorate is responsible for about a quarter of a million workplaces. Because the number of inspectors in post during 1983/84 will be approximately 40 less than were in post in 1979 we have had to accept that this means a reduction in the frequency of planned inspections of farms and other holdings. But the inspectorate is using a risk assessment system similar to the Factory Inspectorate's and those workplaces where the risks are significant will still be given priority. About 60% of inspectors' time will be devoted to primary inspections selected on this basis and control will be exercised to ensure that no holding is left unvisited too long. There will be a reduction in the frequency of visits to holdings not employing labour (now about 12 to 15 years) and some cut back in the coverage provided for industries other than agriculture, e.g. zoos, safari parks, fish farms, and certain leisure activities, such as horse riding establishments and racing stables.

90 Priority will continue to be given to efforts to reduce the serious accident record of overturning tractors, to reduce the numbers of accidents to children on farms, and to raise the level of awareness of the risks from exposure to toxic chemicals.

91 *The Explosives Inspectorate*, a unit of a dozen or so inspectors located in the headquarters of the Factory Inspectorate, will give priority to the following activities in 1983–84 and onwards:

(a) licensing and inspecting premises manufacturing explosives and magazines storing large quantities of explosives;
(b) investigating accidents;
(c) authorising new explosives;
(d) licensing imports of explosives;
(e) liaising with police and local authorities on storage and illegal manufacture of explosives and conveyance by road of dangerous materials, including petroleum spirit;
(f) advising the rest of HSE and industry on chemicals with properties similar to explosives.

The Executive is considering ways of integrating this work more closely with that of the Factory Inspectorate.

92 The work of the *Mines and Quarries Inspectorate* continues to be concerned with achieving an overall reduction of accidents. The mining industry shares with agriculture and construction unusually high serious accident incidence rates and while the general trend has been improving over a long period there have been setbacks in recent years. A large part of the increase in reportable accidents in 1980 occurred in underground haulage and transport operations at coal mines – now approaching 38% of underground accidents. Priority will continue to be given to concentrating on the engineering and operational features associated with these accidents.

93 The principal activity is the inspection of workplaces and some 75% of the staff are employed on this work which consists of:

(a) investigating accidents and dangerous occurrences;
(b) investigating applications for exemptions from the law;
(c) routine inspections.

94 Inspections are carried out not only to observe the conditions in which the work force are employed but also to offer advice to owners, managers, under officials and workmen on the best practices for improving health and safety. This promotional activity is an important and continuing part of the inspector's task and strongly influences the development of health and safety measures. It is recognised that improvements in health and safety may be prevented by restrictive or out-dated legislation and exemptions are issued or local regulations made where it is considered that by doing so the standards of health and safety will be improved. This will remain a continuing commitment until the legislation is reviewed.

95 *The Industrial Air Pollution Inspectorate* (see para 68), supported by technical sampling teams, will be deployed in fulfilment of the objectives outlined in para 76, and in particular will develop its approach to solving the more intractable problems of air pollution control by utilising its 'task forces' which enable the inspectorate's scarce resources to be concentrated on particular questions, for example petroleum industry studies concerned with new technology. Detailed inspections of registered premises will continue but, although the number of registered processes is declining, this does not necessarily mean a corresponding reduction in the time required for inspection. As less money is available for replacement plant, or even for adequate maintenance of existing plant, then there is a greater potential for increased emissions to air and a need for greater vigilance by inspectors. In addition, the number of registered premises will be increased by the inclusion of certain lead works and asbestos works.

96 For certain sectors of industry, we have made agreements with other Government Departments for them to enforce, on our behalf, the HSW Act and certain other health and safety legislation. The Executive maintains liaison with these Departments to ensure that the agency agreements operate effectively and broadly in line with our perception of priorities and our overall objectives. Currently, three such agreements exist:

(a) *The Railway Inspectorate* of the Department of Transport acts as our agent for the enforcement of the HSW Act in respect of work on railways. The inspectorate intends to maintain the recent shift in emphasis in its inspection activities from fixed railway premises to transient work sites on operational lines where the majority of serious and fatal accidents have occurred. For example, lineside safety and the construction and maintenance of electrical traction equipment, especially overhead lines, are causes of serious concern; such matters will be accorded priority;
(b) *The Petroleum Engineering Division (PED)* of the Department of Energy is responsible under agency agreements for enforcing the HSW Act at offshore installations, pipelines and in diving operations. In the course of this work, particular attention will be given to mobile operations which are considered a priority because of the number of persons at risk and the high damage potential inherent in such operations. Supply boat accidents associated with the loading and unloading of cargoes onto and from installations are another area of major interest and our agents will be concerned with the development of well defined safe systems of work. In all cases special efforts will be made to assess both management competence and the arrangements for self-regulation and risk management by installation operators.
(c) In Scotland, *HM Industrial Pollution Inspectorate* (a part of the Scottish Office) acts as our agent in performing functions including enforcement responsibilities which are parallel with those of the Industrial Air Pollution Inspectorate in England and Wales. As well as ensuring that pollution control is maintained at registered premises, a substantial proportion of the inspectorate's efforts will continue to be in connection with the pollution implications of the reception and processing of North Sea oil and gas. The effects of energy conservation measures and reversion to coal as a source of energy will be kept under review. There are a number of new developments which the Inspectorate will monitor: in particular the construction and operation of a chlorine manufacturing plant and the operation of a reconstructed aluminium smelter.

(There are other agreements with, for example, the National Radiological Protection Board and the Safety and Reliability Directorate of the UKAEA, which enable the Executive to seek information and advice to assist it in the performance of its functions.)

97 The inspectorates' activities in the 'field' are supported and complemented by the professional skills and investigative activities of the doctors and nurses in the HSE's *Employment Medical Advisory Service*, one of whose priorities in this planning period will be to encourage firms to establish and develop operational health services (an essential facet of the 'self-regulatory' approach to health and safety to which we are committed). In pursuing its main objective (see para 74), EMAS will continue to develop its links with the inspectorates in the HSE, particularly with the National Industry Groups. While continuing to see the role of its field force as being primarily one of responding to requests for advice on specific or suspected health hazards in particular workplaces, EMAS intends to move the emphasis of its work away from the concept of a 'fire brigade' to that of a more planned, positive service. A regional planning system will require each of its ten regions to establish priorities of work appropriate to the industries and hazards within its boundary. When these plans have been co-ordinated and approved, EMAS will have reassessed its targets for the input of its field force's time in the various different activities concerned. As this is a new initiative the system and method of planning will need to be monitored, and revised as necessary, in the coming years.

98 EMAS will continue to provide advice on medical aspects of employment, rehabilitation and training, in particular to the Manpower Services Commission (MSC). The MSC has reviewed its provision of help for people needing employment rehabilitation and has embarked on a series of experiments. EMAS is co-operating with these experiments and will respond flexibly to any changes in the provision of employment rehabilitation which may flow from them.

Safety assessment work

99 We deal elsewhere in this plan with our programmes of work to do with health and safety standards and the assessment of risks to health from toxic substances. In this section we deal with the ways in which we propose to tackle the areas of potentially very high risk but remoter probability of occurrence, which cause public concern.

100 *The Nuclear Installations Inspectorate* is charged with ensuring the safe design, construction, maintenance and operation of nuclear plant by the licencees/operators. This is achieved largely through the licensing procedure, and through the detailed assessment of reactor design, such as that currently being carried out on the pressurised water reactor, and on advanced gas-cooled reactors whose construction programme extends into 1985. Indeed, the work of this inspectorate is dominated by the nuclear power building programme agreed between the generating boards and Ministers. It is therefore less susceptible to initiative planning by the Executive, and there is little freedom to switch resources according to our perception of the needs of the nuclear industry. Our task lies in ensuring the dedication of an adequate level of resources to the achievement of the Inspectorate's primary objective: ensuring through the licensing regime applied to nuclear reactors that both new and existing power stations are designed, built and maintained to the high standard set by the inspectorate.

101 In spite of our overall manpower economies we decided some time ago that we had to match the demands being placed on the inspectorate by the Government's plans to expand the nuclear power capacity of the UK. In particular, the assessment of the pressurised water reactor, to which the Government affords high priority, has required us to switch resources into this work at the expense of some of the routine inspection work. For some time we have been endeavouring to increase the numbers of nuclear inspectors and a recent Government decision to improve salaries of nuclear inspectors should assist in attracting suitably qualified individuals. We therefore plan to continue recruitment efforts in 1983–84 and onwards. We believe this, helped by redeployment of appropriately qualified and experienced staff within HSE, and independent extramural research and consultancy advice, is the correct response to this externally imposed priority.

102 However, we cannot neglect to give priority to the continuing work of assessment of advanced gas-cooled reactors, whose construction programme extends to 1985. Existing power stations cannot be ignored, and planned inspections continue to Magnox stations, but we should also like to give greater effort to the review of the Magnox stations as they approach 20 years of operating life; whether we can do this depends very much on whether we can increase our resources through our recruitment and redeployment efforts.

103 We must also continue to give priority to operational inspection and safety assessment of existing plants and assessment of new plants operated by British Nuclear Fuels Ltd (BNFL) in connection with the storage and reprocessing of nuclear fuels. This is a major task and the inspectorate is having to match its allocation of resources both to a substantial volume of existing work and to BNFL's expanding capital construction programme.

104 *The Major Hazards Assessment Unit* (MHAU) (part of the Hazardous Installations Group which includes staff engaged, *inter alia*, on the development of regulations requiring the notification of hazardous installations, and grouped for management purposes with the Industrial Air Pollution Inspectorate) was established in 1978 and is the product of our increasing concern over the trend in industry to construct larger and more complex installations which may represent a major hazard to the work force and the general public should an accident or failure occur. To date the main role of MHAU has been to provide expert advice to planning authorities about the safety implications of proposed developments at or in the vicinity of a 'major hazard' as currently defined. The amount of this work is likely to increase very substantially during 1983/84 with the Hazardous Substances Regulations and the likely consequential changes in consultation arrangements currently being discussed with the Department of the Environment and the Scottish Development Department, concerning new installations and developments near existing installations. The Unit will have to be enlarged to cope with this work and other functions for which it has responsibility. In the longer term there may be a need for a further build up of the Unit when the legislation to implement the requirements of the EC 'Seveso' Directive is made and comes into operation.

Resource allocation

105 Resources allocated to the inspection, enforcement, advisory and assessment programmes consist very substantially of professional staff and the staff required to support them.

106 Much of the early planning of our inspection, enforcement, advisory and assessment programmes depended on the then planned expansion of the inspectorates (particularly the Factory Inspectorate). Work of low priority had already had to be cut out in order to cope with the new demands placed upon HSE by the HSW Act. We are now having to plan for a substantially lower level of staff than was intended when the Act came into force. Within our planning system we have therefore taken a fundamental look at the needs of the inspection, enforcement and assessment programmes. Bearing in mind the priorities we have identified we then considered to what extent these programmes should be reduced or increased in terms of resource allocation, and what scope exists for switching resources between one programme and another. Many of the 'routine' tasks of the inspectorates are in fulfilment of continuing statutory functions, to which over a period of time it is possible to make only marginal changes in resource allocation.

107 The broad allocation of staff resources to the inspection, enforcement and advisory programmes of the Factory, Explosives, Mines and Quarries, Industrial Air Pollution and Agriculture Inspectorates described earlier in the chapter, is set out in Table 3, which shows the likely number of inspectors planned for 1983/1984, and for EMAS, the likely number of medical and nursing advisory staff.

Table 3 Planned inspectorate staffing levels

	1983/84 *Planned level*
Factory Explosives	847
Mines & Quarries	113
Industrial Air Pollution	44
Agriculture	163
EMAS (field)	90
Nuclear Installations*	102

*under review

108 We intend to try to increase the number of staff employed on the assessment work described earlier, in spite of our overall reduction in manpower. The assessment workload continues to increase, because of the development of new technologies, the increased scale of industrial installations, and their larger inventories in storage and use of hazardous substances. We are also conscious of the increasing public awareness and concern about risks arising from major industrial installations, and the need to respond to this is one of the criteria for including work in our overall programme.

109 In budgetary terms, the planned levels for 1983/84 represent an *increase* of 26% in the combined resources of the Nuclear Installations Inspectorate and Hazardous Installations Group (which includes the Major Hazards Assessment Unit) over the levels which existed in 1979.

110 At an early stage, we took a planning decision to minimise the reductions in numbers of our professional staff because of the difficulties of recruiting scarce skills and disciplines, the investment in their training, and so on, but not least because of the damage that would have occurred to the inspection, enforcement, advisory and assessment programmes had we not done so. But to do this has meant that their support staff have been cut to the point where the professionals can rely only on a basic level of clerical service. We would like to improve this; we hope that we shall now be able at least to maintain the numbers of support staff during this planning period and to improve their efficiency and effectiveness by cutting out any unnecessary tasks and by the introduction of computerised information and record systems.

Appraisal of results

111 In this section we explain how, acting as a Commission, we satisfy ourselves that the objectives we set for the inspection, enforcement, advisory and assessment programmes are actually achieved.

112 The Executive is statutorily responsible for making adequate arrangements for enforcement. The inspectorates are required to satisfy the Executive that the targets they set for achievement of goals, in terms of numerical performance of the various kinds of activities described earlier, are realistic, having regard to the needs of individual employers, industrial sectors and the degree of risk.

113 We have to satisfy ourselves from time to time that the management control that is being exercised on our behalf, over our programmes for enforcement and assessment, is implementing our policies effectively. There are serious limitations in attempting to measure 'output' from these programmes in a purely quantitative way, for example by counting the number of basic inspections or 'inputs' performed in any one year, comparing these with previous years, and using the figures as a way of monitoring performance either of the inspectorates or of industry in terms of improvements to health and safety. While there are some numerical indicators which can help — for example, information about the incidence of accidents and disease is both a pointer to where efforts should be targeted and to the results being achieved — there are serious snags. Trends have to be watched over a considerable period of time before success or failure is apparent: about a decade, in the case of a programme to reduce a certain class of accidents — e.g. at power presses — and often much longer, perhaps as much as 40 years, in the case of efforts to reduce or eradicate industrial diseases, such as asbestosis and mesothelioma.

114 Many factors external to health and safety also have to be carefully considered and weighed — where this is possible — to see whether they are distorting a trend (for example, the switching of a hazardous process from one workplace to another might lead to false conclusions about the success of a programme at workplace level; the effects of growth in any particular industry may result in a new generation of machinery which transforms the requirements for operator training; or the effects of recession may result in complacency about safety and health problems which might be vanishing only to re-emerge after recovery).

115 Appraisal is particularly difficult in cases of exposure to toxic substances, when a period of industrial activity may be generating a problem which is not recognisable for a number of years; even once it has been identified, the process causing the problem may have changed over that period with advances in technology and it may be difficult to be certain of making the right diagnosis of what went wrong in the first place and what should be done in future.

116 Clearly, prevention is better than cure. Much of the inspection, enforcement, advisory and assessment programmes are devoted to this and, apart from watching the trends in accidents and diseases with their attendant problems of interpretation, we have little to go on in the way of hard facts when we try to evaluate the effects of these activities in terms of maintaining and improving standards of health and safety. This is even more problematic when we come to evaluate the results of the assessment programmes. Negative evidence — in the sense of no serious incidents occurring — is of course encouraging but is grossly misleading as a measurement of risk control. So while numerical measurement may sometimes be practicable, we generally have to look to other means of evaluating the results of our efforts.

117 We have referred earlier in the plan to the three main categories of risk with which our programmes are concerned. For purposes of evaluation our approach is as follows:

(a) Hazards for which statistics of identified casualties are obtainable (e.g. the typical factory accident): for these a good run of statistics is essential. But such information can be no better than the categorisation of injuries, causes of accidents, etc., that is initially adopted. The categorisation should, as nearly as possible, correspond to the hazard that is to be controlled; this is not always possible because of the need to have taken decisions on hazardous situations on the basis of the best available existing figures;

(b) Those hazards for which there may be some evidence but where the connection between suspected cause and injury to any one individual cannot be traced: a typical example would be occupational cancers which develop in a small fraction of those exposed — perhaps 10 to 40 years after an exposure. Epidemiological observations may have established the need for control; however, subsequent monitoring of results could take up to 40 years to establish. We have to make evaluation decisions within a few years, and in making decisions have to rely on 'surrogates'; typically that the control had been seen actually to have reduced the concentration of suspected carcinogen in the workplace to the desired level, or improvements had been observed in intermediate physiological indicators (e.g. blood tests in workers exposed to the substance). In the medium term 'success' can only be measured in such terms. In the longer term, whether health experience is improved would depend on whether the original identification of the harmful substance, and the inferred dose–effect relationship (usually extrapolated far below what is actually proved), were correct;

(c) Hazards of low probability and, should they occur, potentially high consequence (nuclear reactors, hazardous installations, etc.): here the approach is expert assessment of accident probabilities and their consequences, with a 'so far as is reasonably practicable' approach to the engineering of the plant. It is rarely possible to measure 'success' because the likelihood of major accidents is so very low. However, accumulating evidence of contributory plant faults can be used to check analysis assumptions.

118 Appraisal of our enforcement, advisory and assessment programmes must therefore bear in mind the limited nature of the information that is available. How and in what way we plan further corrective action depends on the quality of the judgments made, for which we are responsible in advising Ministers; we believe the representative nature of the Commission and our advisory committee structure enable us to take the best possible advice from all sides before forming these judgments.

4 Research, laboratory services, testing and assessment

119 This chapter deals with the planned activities of our Research and Laboratory Services Division (RLSD) and the research-related work of the Employment Medical Advisory Service, and explains how we have decided where the main thrusts of their efforts should be aimed.

Objectives and resource allocation

120 It is one of our duties under Section 11 of the HSW Act to arrange for appropriate research to be carried out and any subsequent results to be publicised. We see both of these tasks as vital elements in the achievement of our overall objective of securing the health and safety of persons at work, and of persons affected by the work activities of others.

121 Research helps us to achieve improvements in the quality of knowledge and of facilities available to the staff of the Executive and enables them to carry out their duties more effectively and efficiently. Equally, it supplements the work carried out by industry in dealing with its own health and safety problems. Our research effort also helps provide information with which the costs of securing improvements in health and safety may be measured against the degree of hazard in any work activity.

122 There are three principal groups of activity performed by RLSD which can be described as:

(a) research and development;

(b) testing and certification;

(c) scientific support to HSE's field force.

123 Much of the research programme is carried out intramurally by staff of HSE in RLSD's three laboratories (at Sheffield, Buxton and Cricklewood, London) and about 41% of RLSD's available scientific staff effort (305 scientific and technical officers) in 1983/84 will be devoted to this programme. For certain parts of the research programme, however, there may be insufficient facilities or expertise available within HSE or, simply, there may be outside institutions where it is known the work might be performed more effectively. In these circumstances, research projects may be contracted out; approximately £2.2m is planned to be spent on this sort of extramural work in 1983/84 (approximately the same volume as in 1982/83 and about 35% of the total research and salary-related budget).

124 As well as research and development, RLSD also undertakes the testing and certification of certain types of equipment required by industry. About 40 man-years of effort is planned for this activity (a small reduction from 1982/83), in line with the findings of a scrutiny of certification and approvals work in HSE conducted by staff of the Executive in 1981.

125 Finally, about 50% of the Research Division's staff, both scientific and technical, will be engaged in providing support to the policy branches, HSE inspectorates, and EMAS field force, for example, in the form of analyses; sampling and testing of toxic, flammable and explosive substances; forensic investigations; computer services, and scientific advice. We account for the planned activities of EMAS in research and assessment of substances hazardous to health in a separate section which concludes this chapter (see para 144).

Planning the research and development programme

126 Much of RLSD's research work will continue to be directed towards identifying and quantifying hazards which may arise from new technologies, or may be inherent in existing activities but which have been hitherto unrecognised in nature or in magnitude. Changes in attitudes resulting in longstanding risks becoming unacceptable will also prompt research. The equally important sequel to this work is to devise preventive measures allowing the Executive to give sound practical advice.

127 A not unconnected part of the programme will be the development work involving the study of known problems, the improvement of existing preventive measures, and the development of accurate means of measuring hazards and monitoring the working environment for use by the Executive and by industry in its self-regulatory role.

128 The research programme consists of projects originating from diverse sources, notably the inspectorates, EMAS and RLSD itself. Industry is consulted and indeed many projects arise from the activities of our advisory committees, joint standing committees, etc., and have the support of unions and of employers' organisations.

129 We examine and approve, with any necessary modifications, the Executive's forward research programme every autumn. Research proposals are always subjected to a detailed scrutiny of costs, objectives and relevance, a vital task co-ordinated by a specialist team and involving widespread consultation both internally and, wherever appropriate, with interested external organisations. In determining the priority of a particular proposal we require the following factors to be taken into account where applicable:

(a) the nature of the problems and the extent to which we are responsible for developing a solution (industry has considerable responsibilities under the Act for conducting its own research where necessary);

(b) information concerning numbers of people at risk, including mortality and morbidity rates and accident statistics;

(c) the degree of public concern;

(d) the limits of presently known technology and the prospects of the research leading to results that will contribute to a solution;

(e) any other work on the same or closely related topics either at home or abroad. (Considerable efforts are made to ensure research is not unnecessarily duplicated. The research staff of RLSD are, of course, generally aware of other research in their spheres of interest which is being, or has been, undertaken elsewhere; they are assisted in updating this knowledge by means of modern library information systems.);

(f) the availability of suitable staff and other resources within the Executive, or the availability of suitable external contractors;

(h) the extent to which costs could be shared with other bodies.

130 Our research programme consists, of course, of a great many individual projects which we do not attempt to set out in this plan. Information about them is contained in an annual comprehensive statement presented to us by HSE which gives the objectives and resource needs of all projects which we accept into the programme. A summary extract showing the project titles and giving the contractors involved is available to anyone who is interested.

131 The recent reduction of in-house resources has forced us to reconsider the research and development programme. Having examined the factors listed in paragraph 129 which determine whether a project should be included in the research programme, we intend to reduce research in some areas related to the techniques for monitoring of gases and dust where further work would bring a diminishing return, and on explosive fumes, exothermic reactions and some aspects of mechanical engineering design. Consideration of the same factors and of priorities has, however, caused us to allocate more resources to the study of hazards associated with flammable liquid storage, protective equipment, and major hazard installations; this is reflected in the current work programme and, we anticipate, in future programmes.

132 Wherever possible, of course, the cost of any particular research project is shared with other governmental and commercial institutions, both in this country and overseas, which have an interest in the work. A good example of this co-operation is the work on the £1 million study into the behaviour of clouds of heavier-than-air gases for which offers of support amounting to some 70% of the total were received from overseas sponsors, including an offer of £278 000 from the Commission of the European Communities.

133 The management of the RLSD work programme is a dynamic process involving fluctuations in load between testing, scientific support, and research and development elements. We explain in paras 140–142 why we attach priority to the testing and scientific support elements. However, the demands placed on these reactive services are unpredictable. Research and development is also given priority but the load can and indeed needs to be spread over a longer time span. It is the responsibility of RLSD management to fine tune the balance to cater for changing or developing circumstances within the guidelines of the planned programme, so far as is possible.

Monitoring of research

134 During the course of a project, careful monitoring and review ensures that the research targets are maintained, and that the costs are under proper control. The original objectives are clearly set out at the start of the project.

135 For intramurally conducted work, it is the responsibility of the laboratory director to monitor progress at intervals which, in his professional judgment, he considers appropriate. Formal reports covering every active project in the research programme are, however, made to the Executive every six months.

136 The contracts for extramural projects require the contractor to provide reports of progress at specified intervals. Furthermore, at the start of a project a suitably qualified member of the staff of the Executive is appointed to maintain close liaison with the contractor, which involves visiting him and discussing all aspects of the project with him. Thus the Executive is able to ensure on our behalf that a project is progressing at an acceptable rate and towards our objectives. With respect to biomedical extramural research, this is concerned as much with the special requirements of HSE as with the maintenance of a national resource of training and achievement. The contracts are placed with recognised research organisations and involve medically qualified HSE staff as liaison officers.

Assessment and publication of research results

137 The success of a particular in-house research project is judged by the 'customer' division and the director of the appropriate laboratory. The achievement of an extramural project is judged by the Research Director and the division which sponsored the research. The objectives of the research provide the first yardstick.

138 We are more concerned, though, with assessing the contribution of the entire research programme towards the meeting of our overall objectives. For this we have to determine how beneficial are the effects of implementing and using the results. This may take many years and has to be judged, at least in part, by the flow of reports and information supplied to us by the field forces of the Executive and by employers, i.e. reports of accidents, dangerous occurrences and diseases.

139 To extract the maximum benefit from our research we make results public in a variety of ways. In addition to an annual report by the Director of RLSD, specific projects may be described in appropriate scientific and technical journals. Results may also give rise to research papers and technical information leaflets published by the Executive, or may form the basis for publications aimed more directly at industry and commerce such as guidance notes, health and safety booklets and various occasional papers.* We attach considerable importance to formal and informal agreements with other organisations, both in the UK and abroad, for the exchange of research information.

Testing and laboratory work

140 As we indicated earlier, a large proportion of the scientific staff time available within RLSD is allocated to the two other major activities of RLSD; these are the testing of materials and equipment to ensure compliance with published safety standards, and the provision of scientific support services for the inspectorates and EMAS.

141 The testing and certification work is in relation to electrical equipment for use in flammable atmospheres, breathing apparatus and mining and commercial explosives. We recognise the need for this work to be carried out speedily and efficiently as it controls the ability of manufacturers to bring equipment and materials certified as complying with safety standards on to the market. As was indicated in our previous plan of work, we have therefore found it necessary to allocate more staff to this work and to have some of the testing work carried out externally.

142 Similarly, we consider that the scientific services provided by RLSD for the various inspectorates and EMAS must be maintained at an adequate level. These services include sampling, analysis, and forensic work arising from investigations of accidents and dangerous incidents. Considerable use is being made of automated techniques for analytical work, thereby allowing more effective use of staff time. Without these services, the field forces of the Executive would be unable to function efficiently or effectively and our policy development would be starved of essential scientific information.

Future work

143 Much of RLSD's effort remains , by definition, reactive. This is particularly true of the testing and scientific support activities already described above; and, indeed, a large proportion of our active research results from the initiatives of the inspectorates, EMAS and the policy divisions of the Executive. Aside from the very large number of relatively minor, yet important, projects which will continue or commence in this planning period, we see the following new areas of work as being of great significance.

(a) We have invested heavily in recent years in experimental programmes on the behaviour of large-scale releases of hazardous gases to the atmosphere. Our future planning is based on a switch of resources to applications as the results of these programmes become available. The results will be used to improve the predictive methods that are essential tools for the assessment of hazards and the development of siting policies. As with the experimental programmes, this work will be carried out in close collaboration with industry so that a consensus view on acceptable technology can be achieved.

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*For full details see the Publications catalogue (HMSO, 1981, £4.50, ISBN 0 11 883440 1).

(b) Over half of the 'major hazard' sites in the UK achieve this classification because of liquefied petroleum gas (LPG) storage, and siting policy with respect to LPG is therefore a significant activity of the Major Hazards Assessment Unit. An intramural research project is studying several facets of this problem, including the thermal radiation hazard from the fireball resulting from vessel failure under fire engulfment conditions, the behaviour of thermal insulation materials proposed for the protection of LPG tanks and the relative merits of thermal insulation and water spray protection systems.

(c) The ability to predict the behaviour and development of blast waves from explosions has many important safety applications, including predictions of the blast effects of unconfined vapour cloud explosions, of maximum explosion pressures within enclosures, of venting requirements for large systems and of siting requirements for explosion suppression devices. An intramural research project has developed a powerful computer technique for predicting blast wave behaviour in simple situations and further research will be aimed at applying this technique to the practical problems listed above.

(d) Increased effort will be devoted to developing techniques for identifying the presence of harmful contaminants and their metabolites in the human body. Also, techniques for identifying substances which may give early warning of damage to the body will be developed. More effort will be devoted to trying to understand the correlation between measurements taken with personal samplers and the amounts of substances incorporated in the body and the variation of atmospheric concentrations with time. More effort will also be devoted to developing improved filtration materials for personal protective systems and for recirculation systems. Techniques for measuring vibration will also be developed.

(e) We attach great importance to the problems of underground haulage and transport in the mining industry. Work will be concentrated on theoretical and practical studies of the stability and braking performance of manriding and materials transport vehicles on modern rail systems.

(f) Work will continue on methods of explosion detection and suppression compatible with evolving mining technology and mining layout. Particular attention will be paid to the mixed firedamp and coal dust explosion regime, and to recent ignition experience.

(g) We foresee an increasing need to take account of ergonomic factors in the design of personal protective equipment and machine safety systems. We shall continue to develop our work, for example, on safety helmets that are comfortable and secure in addition to satisfying the relevant protection standards, on eye protectors that are resistant to misting as well as to penetration by flying objects and on protective clothing for foundry workers that is comfortable to wear and resistant to molten metal splash.

Assessment and research work in connection with health hazards

144 An important block of work performed on our behalf by the Executive, involving staff of the Employment Medical Advisory Service (EMAS) and the Research and Laboratory Services Division, is concerned with risks to health from exposure to toxic materials. The risks may be short or long term (where exposure to small quantities over a period of years may lead to irreversible physical damage to individuals). The objectives of this programme of work are:

(a) to identify risks and assess health hazards in consultation with representatives of manufacturers and users of materials, and medical and scientific experts, both nationally and internationally;

(b) to provide data for setting standards for safe levels of exposure.

145 We take advice from our Advisory Committee on Toxic Substances and our Medical Advisory Committee. Much of the work is carried out by EMAS and we decided to strengthen the part concerned, in spite of an overall reduction in EMAS staff of 8% since 1979. An essential part of the programme is preparation for implementation in 1983 of the Notification of New Substances Regulations, needed to comply with an EC Directive requiring the testing of certain new substances and notification to a national competent authority (in Great Britain, the Department of the Environment and ourselves). The intention of the requirement is to ensure that information about the properties of new substances is made available to the authority before they are marketed. To meet this new workload we are strengthening the toxicological expertise of our staff, who will be supported by a computerised database with a programme to hold the assessments of substances, and by a small unit for the monitoring of good laboratory practice.

146 We also plan at least to maintain the present capacity in EMAS, albeit still fairly small, to carry out a planned programme of epidemiological surveys. These surveys will be complemented where necessary by extramural research placed mainly through the Medical Research Council.

147 In the microbiological field, the expected submission early in 1983 of the report on the classification of pathogens from the Advisory Committee on Dangerous Pathogens is likely to lead to some follow-up work by EMAS in relation to the recently introduced regulations requiring notification to HSE of the keeping, handling and transportation of certain of the most dangerous pathogens. Finally, EMAS may also have a new role following the conclusion of the current discussions, and subsequent consultations, on the constitution of the Genetic Manipulation Advisory Group.

5 Information

148 We continue to believe that publicity and the provision of information are integral to the objectives we have set ourselves, and have made a significant contribution to the growing awareness of health and safety hazards in the community since 1974. However, we are conscious that we must seek to disseminate information as widely and as efficiently as possible, and we thus intend to concentrate on three main functions during the period covered by this plan.

149 The first objective of our information and publicity work will continue to be fostering awareness of legislative requirements and recognised good practice. It is unrealistic to assume that all employers and employees will be fully conversant with the often complex pattern of legislation which affects activities at work; small businesses, the self-employed and widely scattered industries do not always have the expertise to ensure that they are fully compliant with the law, and it may well be that they need help to apply constructively the approved codes and guidance notes which HSE publishes. It is therefore vital that these groups particularly, but also all others at work, are given the opportunity to gain a knowledge of the particular hazards of their work and their responsibilities to mitigate those hazards. To this end, we publish a wide range of material written in comprehensible language and applicable to specific processes or machines. The HSE press office is in daily contact with the national press, radio and TV, looking for opportunities to explain HSE's role and the individual's responsibility for his safety and health at work through them to the public at large. The press office is very conscious of the need to stimulate a greater debate, particularly in the popular media, of health, safety and occupational welfare topics. We also liaise with other bodies concerned with health and safety. Furthermore, we shall be seeking to improve communication in all these areas in the future.

150 The great majority of our work is concerned with detailed issues of concern to particular groups of workers or the general public. These groups are best reached through the scientific and technical press and through local newspapers, radio and TV as well as through the publication of a wide range of booklets and information sheets aimed at particular audiences. We are convinced that it is right to deploy substantial resources in getting over our message through these channels. The press office works closely with the media to initiate and guide coverage of health and safety issues, including feature articles, interviews, facility visits and press releases. They also arrange briefings for journalists on health and safety topics, including press conferences, both national and regional, where the matter is of major importance. Officials are likely to take part in some ten major radio and television broadcasts during the year, and the press office will brief producers of some 30 other programmes throughout the year. Although much of the output of HSE is of a technical nature it can have a profound effect on workers in a particular industry. With this in mind material is targeted to specialist media and specific trade union newspapers. Out of the 100 plus press notices a year issued by the press office many are of more general interest. In these cases the press office ensures that, in addition to the technical media, the national media are invited to press conferences, briefings and facility visits and are properly briefed. As some subjects are of interest to regionally based industry it is essential that the regional media have a service directed to them. This is achieved with the assistance of press officers in the regional offices of the Central Office of Information who can adapt a story to local needs. Regional publicity is also sought by, for example, making Area Directors available for appearances in the regional media.

151 Our other services include translation, and making or arranging to have made, technical, scientific and general translations from texts in foreign languages on health and safety topics; a limited interpreting service is also available, and the HSE public enquiry point now deals with some 23 000 phone calls and 5600 letters per year.

152 There is a continuing need to make sure that there is proper understanding throughout the community of the nature and scale of the hazards which can affect people both at work and away from it. Some risks are not well-understood and may be underestimated. In other cases fears may be exaggerated and the need is to put particular risks in proper perspective. We are reviewing what is being done to see whether our effectiveness in this general field can be increased.

153 One of the best ways to disseminate information is clearly on a person-to person basis, and we accordingly devote great attention to helping our field inspectors to keep up to date with the latest technological developments and their accompanying hazards. As in all our activities, we believe that consensus and encouragement are the best means of progress, and we ensure that inspectorates remain open to dialogue and ready with advice in order to promote safer practice. However, it is not sufficient to hope that the programme of visits to workplaces will be able to achieve this end by itself, and so we will be continuing to exhibit at relevant trade conferences and fairs at the same level as in 1981, as experience has shown that a great deal of interest can be generated by a lively presentation of HSE's activities, and this interest in turn fosters the awareness of responsibilities which we seek. Interest in health and safety matters is also enhanced through lectures which inspectors spend a proportion of their time giving to employers and workers' representatives.

154 The second objective which we shall concentrate on is an adjunct to the first; namely, to ensure appropriate research and discussion of our forthcoming projects by those most concerned. The publication of draft regulations and approved codes in consultative documents is already enshrined in the framework established in HSE since 1974, but we intend to ensure that the system is operating in the most effective way to combine smooth and rapid development of proposals with the maximum opportunity for public comment.

155 The third objective is the provision of information and publicity in order to ensure that HSE achieves its objectives in the most cost-effective way possible. On the first level, we will be encouraging self-regulation in industries where safety and health hazards can be easily understood and safe working practices easily implemented; this is the aim of much of the guidance material we shall be publishing and, although it can only follow on from a broad awareness of agreed standards, it will, eventually, mitigate much of the burden of inspection and enforcement. This will leave inspectors more time to give advice, and will allow an extension of the more efficient use of resources already apparent in the foundation of the National Industry and Field Consultant Groups within the Factory Inspectorate. This, however, is the long-term aim.

156 The forthcoming period will see more progress on the second level, which is to utilise new technology as widely as possible to store and disseminate information for the benefit of both HSE and industry. The SHIELD system of accident statistics will be extended and improved, and updating work on our SIGMA computer in Sheffield is envisaged. It is also proposed to extend this latter facility to the planning branch, in order to facilitate the setting of our objectives and the monitoring of progress. Similarly, advances in video recording and other information technology will enable us to present material in a more lively and understandable form, and work will be going ahead on several films about specific aspects of health and safety.

157 The development of a computerised library information system is also an important aspect of the work, and new databases and services becoming publicly available are monitored to ascertain if they could be of value. HSE's database of published information, known commercially as HSELINE, was launched in December 1981 and has provoked wide interest in the UK and abroad. The PRESTEL service commenced in 1979 continues to update HSE's programme. Currently a research programme is being mounted to ascertain the effectiveness of HSE's contribution to PRESTEL.

158 Finally, we must attend to the material we publish as well as the medium we use and the audience we hope to reach, and we intend not only to monitor the relative costs and benefits of each publication or event but also to ensure that the material is helpful and useful and that it recoups its costs as far as possible.

6 International work

159 The close interdependence of domestic and international policy, notably as a result of our membership of the European Community, is particularly significant in respect of health and safety at work. Participation in international discussions on health and safety, and taking action to honour the resulting commitments make an important contribution to improving health and safety protection in this country. Much of the work lies in setting agreed standards — for conditions at the place of manufacture, for safe transport, for standards of construction or controls over toxic substances. The achievement of a standard which is consistent with the needs of industry and with existing UK policy is the culmination of lengthy discussion, consultation and negotiation. Our international responsibilities, especially in the European Communities, are an important factor in our work and have major effects on national policies.

160 Treaty obligations make many measures mandatory for signatories. Some provisions of the Communities' Treaties and their related instruments have direct application in this country. Others have to be implemented by new UK legislation or, wherever possible, by administrative measures. We continue to take account of Community plans and developments in drawing up our programme of work; but we also have to be sufficiently flexible to accommodate consultation and negotiations occasioned by new Community developments.

161 Our greatest single concern is naturally with European Community Directives. Some of these are negotiated and adopted under the European Commission's Safety Action Programme (described below) but most have been intended to eliminate barriers to trade in the Community. We become involved where national requirements for health and safety at work hinder articles from being traded freely within the Common Market. We have to ensure that agreed Community-wide standards are, wherever possible, compatible with existing legislation and, that where we have to change our requirements, levels of health and safety protection are maintained or improved. The resulting work load on policy branches is considerable and it is anticipated that a substantial commitment of resources will be required over the next few years. Progress is fitful depending on the speed of agreement and the priorities accorded by different pressure groups.

162 In the next few years negotiations on directives to remove barriers to trade which have health and safety implications are likely to relate mainly to product standards of agricultural tractors, pressure vessels, lifting apparatus, machine tools, construction plant and equipment, and to continued work on the classification, packaging and labelling of dangerous substances. The European Commission's Action Programme on Safety, Hygiene and Health Protection at Work was introduced in 1978 to provide a framework of initiatives for health and safety which the Commission hoped to see progressed at Community level during the ensuing years. A new draft programme for 1983 and onwards is now in preparation and our staff are actively involved in discussions with Community and member state officials to progress this work. We are involved in the development of initiatives under the existing programme by representing the UK in the tripartite Advisory Committee for Safety, Hygiene and Health Protection at the Workplace, set up to advise the European Commission, and in Council negotiations on proposals for directives or recommendations to introduce European standards of workplace protection. We have given priority to encouraging the European Commission to produce more detailed plans of work in this sphere so that we can anticipate Community proposals and relate them to our own planning. Work in this sphere will concentrate on an agreed approach to combating occupational diseases, to establishing limit values for exposure to hazardous agents, and to establishing protective measures against hazards arising from new technology, as well as detailed agreements on the control of particular harmful agents.

163 We are also involved in discussion of initiatives for protection of the environment, where the Department of the Environment has the major UK Government interest; with the continuing work of the European Coal and Steel Community, particularly through the tripartite Mines Safety and Health Commission (MSHC) and its specialist working parties which agree good working practices for all the extractive industries; and on the development of nuclear safety and radiological protection standards for application under the Euratom Treaty.

164 Finally, we participate in a wide range of useful research work into occupational hazards overseen by the Communities; in particular in the work of the European Foundation for the Improvement of Living and Working Conditions, whose aim is to increase knowledge likely to assist in the planning and establishment of better conditions, by collating information and sponsoring research on relevant topics.

165 Our international commitment extends beyond the European Community, notably to the work of the International Labour Office (ILO). The Department of Employment (DE) is responsible for UK relations with the ILO; and DE officials, acting on advice from Departments and other bodies, usually represent the

UK. But where health and safety matters are key agenda items HSE officials may be invited to represent the UK; and, more informally, HSE officials regularly provide advice and assistance to the ILO on a broad range of issues.

166 In 1981 the ILO adopted Convention No 155 and supporting Recommendation No 164 on Occupational Safety and Health and we have been asked to advise the UK Government on ratification and acceptance. As these instruments contain provisions that are, in many respects, similar to those of the Health and Safety at Work etc. Act 1974 we have decided that the question of accepting all the provisions should be discussed in the widest possible forum and we have asked the Executive to issue, on our behalf, a consultative document.* HSE officials will be involved in seeking the views of the CBI, the TUC, local authority associations and Government Departments and will report back to us in the spring of 1983. We will then be in a position to offer advice to the Department of Employment.

167 HSE officials have already begun preliminary work on health and safety matters which are likely to be raised at the ILO's annual conferences over the next three years. In 1984/1985 the conference agenda will almost certainly include, with a view to the adoption of instruments, the revision of the Occupational Health Services Recommendation 1959 (no 112) and/or the safe use of asbestos. These two items are in addition to a proposed general discussion of an ILO programme — the International Programme for the Improvement of Working Conditions in the Environment (PIACT).

168 In addition to the ILO we make a contribution to the work of other United Nations agencies and bodies. In 1983 HSE will be asked to give consideration to the UN Environment Programme's (UNEP) system-wide, medium-term plan which brings together the work of the UN agencies dealing with aspects of environmental matters. Whilst the plan is formulated by the UNEP secretariat, HSE will have made an input at an earlier stage, where appropriate, through our work on, for example, the ILO or World Health Organisation.

169 A proportion of HSE's international work concerns non-governmental standards-making bodies. HSE officials continue to attend committees of the International Standards Organisation and the International Electro-technical Commission as well as their European counterparts — CEN and CENELEC and others. In the case of CEN and CENELEC standards, these may be adopted or commissioned for European Directives and HSE's work here is therefore particularly important.

170 HSE, on our behalf, exchanges information internationally and has established direct liaison with two health and safety agencies in the USA. Through the UK Labour Attaché service and other contacts in UK embassies abroad HSE regularly both receives and supplies information. This is all in addition to the regular flow of visitors from foreign governments and international bodies who meet HSE officials to discuss UK health and safety legislation and practice.

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*ILO Convention and Recommendation concerning occupational safety and health and the working environment. HSE (1982), £1.50, ISBN 0 71760106 4.

7 The legal framework, initial integrity and future development

171 In the opening chapter we outlined the broad category of hazards to which our programmes have to be related. Here we describe how we intend developing the framework of control envisaged in the HSW Act, in order to meet our objectives in controlling those hazards.

Review of legislation

172 First it is necessary to explain how we aim to satisfy an important intention of Part One of the Act, that its provisions shall have effect with a view to enabling previous health and safety enactments to be 'progressively replaced by a system of regulations and approved codes of practice operating in combination with the other provisions of this part and designed to maintain or improve the standards of health, safety or welfare established by or under those enactments' (Section 1(2)).

173 Our approach to this task has been to deal with particular areas of hazards, selected on the basis of the priorities and criteria referred to elsewhere in this plan, in 'packages' consisting not only of legislation and/or codes of practice, but also other forms of guidance and appropriate enforcement arrangements, all applied to the objective of controlling a hazard in the most appropriate and effective way, wherever it occurs in working life. We have learnt by experience that there is no simple formula for construction of these 'packages': their balance as between the general duties of the Act itself or more specific subordinate legislation, codes of practice, guidance and enforcement activity, depends on the nature of the hazard itself and the complexity (or simplicity) of the procedures needed to control it. We explain later in this chapter how we look at the various factors which affect the 'shape' of the 'package'.

174 We could, of course, have reviewed the tangle of legislation we inherited just as it stood, examining what already applied to factories, mines, farms, and so on, and trying to reassemble all the piecemeal requirements which applied to these activities into a comprehensive set of regulations. But we decided this approach would be unlikely to produce the balanced and coherent system of controls for the protection of work people and the public which was intended by Parliament.

175 Moreover, our decision to fulfil this statutory obligation in the manner we have chosen was reinforced by the need to accept certain constraints, which would have made it difficult or impossible to adopt a quicker but more legalistic review. First, resource constraints (which have become more severe) restrict the extent to which effort can be devoted to a review of existing provisions, without linking this exercise to one of the other important areas of our programme of work to which we have decided to give priority and allocate resources. Secondly, we have had to devote some of our resources to developing controls for new or newly recognised hazards (such as genetic manipulation and dangerous pathogens) to which none of the earlier legislation applied; and to negotiating and implementing EC Directives.

176 Our overall aim here is to achieve a real improvement in health and safety protection, and not a high tally of legislative changes for the sake of 'tidying up'. We do not overlook the need to continue to make progress towards a flexible, comprehensive and comprehensible system of controls, more readily capable of adaptation to changing environments and technology.

177 There are currently some 500 separate pieces of health and safety legislation (including regulations and orders), about 100 of which have been made under the HSW Act. Every opportunity is taken during the development of our proposals to ensure that earlier legislation — whether obsolete or simply too narrow in scope — bearing upon the hazard concerned is removed or subsumed by the new, balanced packages which are necessary to meet Section 1(2).

178 Within the limitations of the resources we can spare for the task, we also aim through the efforts of a small HSE working party to continue a review of obsolete or unnecessary provisions, with the objectives of identifying those which impose unnecessary administrative and cost burdens on employers without any contribution to the maintenance or improvement of working conditions, and revoking or repealing them. In 1982 we considered the first report of the working party and decided to consult in our normal way on their recommendations that a number of requirements contained in the Factories Act 1961 and subordinate regulations should be removed; and we agreed that the working party should submit further reports on other areas of health and safety legislation where it seemed likely that unnecessary burdens could be removed. We shall bring forward proposals to Ministers as this work develops; but we consider it cannot be afforded a higher priority than it is presently being given and that the main effort by our policy staff must continue to go into developing the 'package' approach to hazards.

Achieving a balanced system of controls

179 Our normal starting point in planning health and safety controls is to examine whether a risk is deserving of special treatment over and above what is already required by the general duties of the HSW Act or more specific requirements of the relevant statutory provisions.* In general, we have decided to recommend to ministers regulatory controls only in cases where effective control of existing or newly identified risks cannot be achieved satisfactorily by other means (which, for example, could include codes of practice approved by ourselves, codes of practice produced by industry through our encouragement, guidance material addressed to industry, company, workplace or operator levels, enforcement initiatives by our inspectors or agents, or publicity efforts).

180 Our decision will depend on close examination of such factors as the nature of the risk involved; any relevant existing standards and existing regulatory controls; if these are not satisfactory, the extent of control necessary to bring the control standard up to a satisfactory level; and the likely costs and benefits. There is a logical progression guiding our decision making. We first relate the problem to our ten criteria (see para 17). Next the available statistical, scientific or other information about the risk (or activity giving rise to risk) will have been assembled and the risk assessed before we can consider what needs to be done. This leads to selection of a control measure of a kind appropriate to the risk. Then, depending on the type and severity of the risk, measures could include requirements for minimising the effect of the hazard (a) by placing duties to take certain actions upon employers, supervisors, operators; or (b) by reducing the risk at its source (for example by controlling noise levels at source or by setting maximum levels of exposure); or (c) by imposing standards for equipment or for approval or certification of equipment; or (d) by provision of personal protection equipment; or (e) by requiring actions, such as monitoring of the working environment, health surveillance, keeping of records, notifications; or (f) by restricting the number of people who will be exposed to the risk (e.g. by isolation of the work activity, specifying the number of people with access or their qualifications, etc.); or (g) by substitution where possible of safer substances, processes, or articles; or (h) by prohibition of hazardous articles or substances or activities.

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*As defined in Section 53(1) of the HSW Act 1974.

181 We are well aware that the more detailed and complex the regulations, the more limited their application, the quicker they become out of date and the less they are understood. We have found that because of their legal status approved codes can take nearly as much time and effort to up-date as regulations – and the issue of guidance to back up the general duties in the Act may be quicker and more appropriate in some cases. We try to ensure that where regulations are to be used, they should be simple and flexible, as a rule setting general objectives and standards for the control of the hazard. Detailed guidance on how employers and others can best achieve those objectives and any relevant specific standards are contained in supporting approved codes or other guidance.

182 It seems right, as a general rule, that equivalent standards of health, safety and welfare should be laid down for all workpeople irrespective of their workplace (recognising and assessing the effect that some variations will have in 'real life'). We therefore plan comprehensive coverage 'across the board', and we require careful justification of any exceptions to this policy.

183 We also try to ensure that wherever possible regulations should cover broad areas of hazards. Taken with our 'across the board' approach, over the years this should result both in simplification of the structure and in curtailment of the number of regulations on individual hazards (one of the criticisms of health and safety legislation contained in the Robens Report). There is already evidence that the new structure is beginning to take shape, e.g. in the proposed Classification, Packaging and Labelling of Dangerous Substances Regulations, but we are conscious that health and safety legislation is still fragmented and complex and likely to remain that way unless we make efforts to simplify it. In general, therefore, we endeavour to ensure that new regulations should not amend but should repeal or revoke old legislation, reinstating in the new regulations any provisions still thought necessary. Sets of regulations on the same subject are to be consolidated wherever possible with new regulations and presented as a coherent package.

Initial integrity

184 We are currently formulating our policy in response to the Government's initiative on standards as set out in a recent White Paper. The necessary action has been commenced to re-examine the balance between the work we have been doing to promote standards for health and safety at work and the work of the Executive to do with certification and approval of products. This will receive high priority during the period of this plan of work and, as a first step, we have begun public consultation with interested parties about our future policy towards certification and approvals. The following section of our plan simply outlines what we are presently doing to ensure the initial integrity of articles and equipment supplied for and used at work.

185 The prevention of avoidable accidents clearly has an important role to play in an active approach to industrial safety. One way in which this can be achieved is by paying attention to the initial integrity of the design of plant and articles, i.e. by actively encouraging the designing of safety features before the article is made and by avoiding at the design stage the foreseeable hazards to the user. Under this approach, manufacturers, designers and suppliers all have an important part to play in trying to ensure safety at the workplace itself. A systematic concern with initial integrity is, in essence, the philosophy underlying Section 6 of the HSW Act.

186 Even before the passage of the HSW Act the inspectorates which subsequently joined HSE were concerned with the safety of the design of new plant, though in most cases the legal basis for their activities was more limited than that provided subsequently by Section 6. Inspectors responded to problems which they came across by contacting, often through inspectors in other areas the maker or supplier of the defective plant, advising them of the deficiencies and any relevant guidance or standard and sometimes prosecuting. There was a considerable amount of informed comment between specialist inspectors and suppliers of plant, which was not confined to guarding of machinery but covered a range of hazards, such as risks of dust explosion in new flour mills or of structural failure of lifting equipment. In some industries JSCs developed standards of safety for new plant. There were a number of statutory provisions which required the prior certification or formal approval of new plant by the relevant inspectorate.

187 Although these activities continued after Section 6 came into force, it was evident that a more systematic approach was needed to implement fully the extra scope provided by the new legal provisions. From 1979 onwards, HMFI has placed a requirement in its 5-year plan for each HSE Area to compile a list of known manufacturers, suppliers and importers of articles designed for use at work, and each year to review a quarter of them and where necessary, to visit to discuss present and foreseeable product ranges in relation to Section 6 duties.

188 The resources devoted to this work have increased from 1500 inspector half-days in 1979 to 4000 in 1982 (some 5% of HMFI's current resources). Considerable effort has been devoted by specialist factory inspectors and the National Industry Groups (NIGs) to the development of standards relating to initial integrity. The Executive's substantial contribution to the development of British Standards also continues to develop the philosophy of Section 6 as does its work on approvals, certification and testing of products.

189 While most Section 6 effort falls to HMFI a substantial amount of activity on certification and approvals is carried out by the Research and Laboratory Services Division and HM Mines and Quarries Inspectorate.

190 Deficiencies in the initial integrity of plant, articles and substances are of course only one of a number of causes of occupational accidents and illness. Inadequate installation or erection, improper use, faulty or inadequate maintenance, careless transport, faulty storage, ineffectual training of employees, unsatisfactory systems of work – all can and do cause accidents and diseases.

191 Another important way to influence the initial integrity of plant and equipment, without going so far as to approve or certify particular designs or types, is through HSE participation in the preparation of British Standards which indicate the safety characteristics or performance which products should embody. HSE is currently participating in some 350 BSI Technical Committees and over 100 British Standards are currently referred to in HSE guidance material. In appropriate cases, for example where the product concerned is particularly relevant to safety at work, British Standards may be approved under Section 16 of the HSW Act as providing authoritative practical guidance on compliance with general statutory duties under Section 6(1) of the Act, and our programme currently includes examination of a number of British Standards, details of which are contained in the Appendix. It is intended that this work should be extended to other British Standards.

192 The approach we are developing to initial integrity will of course need to take full account of and where necessary be modified by European Community initiatives; the draft directives on product liability and on technical standards and regulations will be particularly relevant.

193 We are now giving particular attention to re-examining the effort we should devote to approval and certification schemes (which can present substantial costs to both manufacturers and our own resources). Following an internal study, we decided to publicise a consultative document on the criteria which should govern the future use by the Executive of certification and approvals schemes if an appropriate balance of effort is to be devoted to securing the initial integrity of plant and articles which are especially critical to safety at work. If the criteria which the document presents are endorsed, they will provide the basis for identifying those certification and approvals schemes whose contribution to industrial safety no longer justifies their continuation (at least in their present form).

194 This is an important initial step towards a complete re-assessment of the appropriate balance of effort we should expend between initial integrity and other aspects of compliance; and we have asked the Executive to keep this question under constant review.

Future developments

195 In our previous plan of work we included comprehensive appendices which indicated all proposals for the production of regulations, codes of practice or guidance notes which were currently in hand, whether they were at the initial stages of a long period of development, or approaching completion. A number of these projects continue, and detailed information concerning the major proposals for legislation (and any associated approved codes of practice or guidance notes) which we expect to be implemented during the next two years is contained in the Appendix to this plan.

196 As we said at the outset, our criteria for deciding whether work on reducing a risk, whether by regulations or by other means, should be included in our programme have to be met before we give our approval to it going forward. Here we conclude the discussion of our plans for developing the legal framework by identifying subjects on which we are satisfied there is a prima facie case for work to continue during the next two years, and which could lead to regulatory controls, but about which we cannot yet be specific as to the final shape of the 'package' we shall propose.

197 Some of the more important items of work which will be developing during the next year or two will be to do with the following risks or activities:

Mining safety and health (see also the Appendix)
Machinery safety
Lifting equipment
Docks
Training and first aid for divers
First aid — offshore
Safety representatives — offshore
Information for employees
Noise and vibration
Microwaves and non-ionising radiations
Control of substances hazardous to health
Asbestos
Enforcing authority arrangements
Standards
Industrial lighting
Homeworkers

198 In a number of these cases the major effort over the next two years will go into concluding rounds of consultation and considering the comments of interested parties and our advisers before we are able to take the final decision about the form of control we shall recommend to Ministers. Some have already received considerable attention; for example we have taken action this year to improve standards of control for asbestos dust and this hazard will remain under close surveillance. In some cases, for the reasons explained in the previous chapter, international commitments may circumscribe our freedom of choice. But our overall aim remains the achievement of a coherent, comprehensive, up-to-date and readily understood framework of legislation and practical guidance covering risks arising from work activities.

Appendix Work on regulations and associated approved codes of practice and guidance notes

This Appendix summarises our current work programme on the preparation of those regulations and associated approved codes of practice and guidance notes which we expect to complete during 1983/84 and 1984/85. Specific projects are included in the programme in response to needs identified by various sources, notably industry and trade unions, the general public, Central Government, and the Executive itself. The reasons for these requests are themselves various but include in particular:

(a) The needs of industry which may be adversely affected by out-dated legislation inappropriate to modern conditions and which may not match contemporary assessments of risk;

(b) increasing public awareness and concern over certain types of hazards;

(c) the need for us to implement EC Directives.

The programme presented here is merely part of the long-term continuous effort envisaged by Robens to replace existing fragmentary and incomplete legislation with complete and coherent legislative and advisory packages. These will be tailored to be compatible with our previous and future work and will be sufficiently flexible to allow for considerable future industrial, technological and social change. It is divided into three categories corresponding to the three types of hazard we identified at the beginning of this plan, i.e. work associated with immediate hazards, long-term hazards and hazards of a catastrophic nature. Each of these categories is further sub-divided into specific areas of concern.

(Some projects will clearly deal with both acute and long-term hazards: for convenience, we have simply classified these projects according to one of their predominant characteristics.)

Notes (a) Reference is made at the end of the 'justification' section of each project to those criteria for inclusion in our plan of work (which we list in para 17) and which are appropriate to that project.

(b) Projects are identified by a new numbering system which is being introduced and which indicates the division of HSE engaged in the work. Project numbers used in the previous plan of work are included (where appropriate) in brackets.

1 Work associated with immediate hazards

The individual projects described below form a major part of our legislative and advisory programme and are aimed both directly and indirectly at reducing the incidence of injury and acute poisoning resulting from the manufacture, use, storage and transport of plant, materials and substances while at work. The projects represent a broad front of activity in which many divisions of the Executive are involved and which give rise to liaison with many external organisations such as the British Standards Institution, Government Departments, the police and local government.

(a) Explosives

Legislation relating to explosives has been built up piecemeal since the Explosives Act 1875 came into force. Its requirements are considered to be overexplicit and difficult to comprehend. Furthermore, much of its detail is obsolete and there are gaps in the controls, particularly in relation to the security of explosives. The projects listed below are a part of our long-term, co-ordinated effort to replace this existing legislation with complete and coherent legislative packages which will control all aspects of the manufacture, storage, handling and importation of explosives, and at the same time reflect the stricter needs of the present day. They will give industry more options thus permitting safety standards to be maintained with maximum cost-effectiveness while at the same time reducing the demands on HSE resources. Indeed, this work has already commenced with the recently introduced regulations on the classification and labelling of explosive articles and substances. In addition, we are working on regulations requested by the Home Office which transfer certain enforcement responsibilities relating to explosives to the police and which place greater responsibilities for security on those persons who use explosives. The Explosives Inspectorate is involved in all projects, and the RLSD Explosion and Flame Laboratory is involved in the development of test methods and criteria.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
HSDA/4 (EXPL 4)	Explosives (Conveyance by Road) Regulations	Regulations, approved code of practice, guidance note	To ensure that controls on the conveyance of explosives by road reflect modern needs while maintaining or improving security and safety.	Existing legislation is out-dated. Industry is pressing for these revisions as they would remove barriers to trade. (dghj)
SPC/10 (EXPL 6) **and SPC/11** (EXPL 5)	Explosives in Mines and Quarries	Regulations, approved codes of practice	To produce a legislative package which takes into account modern materials, methods and security needs, and which removes the necessity for the issue of over 1000 exemption certificates each year in mining and enhances public safety at quarries.	Both sides of the mining industry are pressing for these changes. Existing legislation is out-dated and does not take into account public concern over security. Exemption certificates are costly for the mining industry and HSE to administer, while at quarrying operations there is concern that the safety of the public is not adequately assured during blasting. (cdgh)

(b) Agricultural safety

The use and misuse of tractors has resulted in a very large number of serious and fatal injuries. The Agriculture (Tractor Cab) Regulations 1974 had a marked beneficial effect on the frequency of these accidents, but there is still scope for improvement, particularly in relation to the self-employed and children. Much of the current inspection programme of the Agriculture Inspectorate is aimed at achieving these further improvements, largely through the use of persuasive skills. It is the intention, in part, of the following proposals to give some legislative backing to these efforts.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
To be assigned (AG 3)	Amendment of Agriculture (Tractor Cabs) Regulations	Regulations	To amend the existing legislation to ensure that the protection given by tractor cabs to agricultural employees is extended to the self-employed.	Tractor cabs have greatly enhanced the safety of agricultural employees. Nevertheless, there remains a significant number of 'roll-over' accidents to the self-employed as a result of using unprotected tractors. (cchi)

Project number	*Project title*	*Output*	*Objectives*	*Justification*
To be assigned (AG 4)	Amendment of Agriculture (Tractor Cabs) Regulations — testing and certification	Regulations	To make the static testing requirements of the regulations compatible with EEC requirements, and to transfer the responsibility of certification of tractor cabs from HSE to the manufacturers.	Amending regulations in connection with static testing are needed to comply with EC Directive 79/662/EEC. Transfer of certification responsibilities will streamline certification procedures and will produce savings for HSE at little cost to industry. (fg)

(c) Electricity

Existing controls on the use of electricity only apply at a limited number of workplaces, notably factories and mines, and are extremely out-dated in their provisions and terminology. As a consequence, inspectors of the enforcing authorities and persons at work are having to place increasing reliance on more modern but unapproved standards which have no special legal status. It is our intention that these uncertainties should be removed by the introduction of regulations and codes of practice which will apply at all workplaces, incorporate modern electrical practice, and will be easily understood.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
SPA/13 (ELEC 1)	Electricity Regulations	Regulations and approved code of practice	To produce modern, comprehensive, easily understood provisions for the safe use of electricity at all work activities and to remove the need for large numbers of exemption certificates relating to electrical equipment in mines.	Existing controls have developed piecemeal over many years and are now outmoded in terminology and practices. They protect only about one-third of persons at work; across-the-board regulations reflecting modern technology are needed. Furthermore, the issue of exemption certificates is costly to industry and HSE. (cghi)
SPC/6 (M & Q 1)	Coal and Other Mines (Safety Lamps and Lighting) Amendment Regulations	Regulations	To permit the use of electric mains lighting at all places underground without the need for separate regulations to be made for each mine at which this facility is required.	Existing procedures require separate regulations to be made for each mine in which mains electric lighting is required at certain places underground. The proposed regulations will remedy this cumbersome situation to the benefit of HSE and the mining industry. (gh)

(d) Mining safety

It is our intention in the long term to replace existing mining legislation with a set of coherent and comprehensive codes and regulations which reflect modern practices and technologies and remove the present need for large numbers of exemptions and approvals which are very complex and costly to administer. The topics we have decided to tackle during this planning period are part of that strategy and have been chosen in response to previous significant accident histories and to requests directly from the mining industry.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
SPC/1 (M & Q 2)	Ventilation in Mines	Regulations, approved code of practice	To improve mining safety by replacing existing regulations with controls which take advantage of modern ventilation technology.	Existing regulations are now outdated. Computer systems and other new ventilation technology require new regulations; these will allow implementation of recommendations arising from the Houghton Main explosion in which five men died. (cdh)
SPC/2 (MECH LIFT/1)	Shafts and Winding in Mines	Regulations, approved code of pratice	To produce regulations which will apply at all mines and which will improve control of hazards arising from shafts and winding equipment by taking advantage of new techniques.	The mining industry is pressing for these regulations to speed up introduction of new systems and techniques and to remove the existing clumsy arrangements which require a number of separate provisions to be made at certain mines. The regulations will allow implementation of recommendations made following the Markham disaster in which 18 men died. (cdghi)
SPC/3 (TSPT 1)	Transport in Mines	Regulations, approved code of practice	To produce regulations which will enhance safety in the use of underground transport in mines.	Approximately 40% of underground accidents involve transport systems; many are fatal. Existing regulations do not take account of technological changes which can improve safety. (bch)
SPC/4	Mines Access Regulations	Regulations, approved code of practice	To ensure adequate arrangements for access and egress in mines by replacing existing regulations with controls which apply at all mines and which complement the regulations associated with shafts and winding (MECH LIFT/1).	Existing regulations do not cover all types of mines and demand only low standards. The approved code will help meet the needs of employers and employees for additional information and advice. (cij)

(e) Standards approval

In recent years there has been a growing demand for us to make fuller use of British and International Standards in the legislation we administer and to formally approve standards as codes of practice under Section 16 of the HSW Act. Unlike other projects in this Appendix, those described in this section will not result in regulations. Instead they constitute a programme for possible approval of standards relating to products which have been suggested by the Department of Industry and the British Standards Institution. These approvals are intended to give manufacturers, suppliers and importers practical guidance on their duties under Section 6 of the HSW Act relating to articles for use at work without impeding technical progress or unduly restricting freedom of choice. Approval of standards for this purpose may also ensure the acceptability of domestically produced goods and encourage equitable safety specifications for imported goods. In addition to those listed here, we are considering the approval of standards relating to a number of other products but have delayed further work until safety-related amendments are made to the standards concerned.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
	Approval of standards	Approved codes of practice	To prepare and approve the following product standards as ensuring compliance with Section 6 of the HSW Act:	Approval of British Standards for this purpose has been requested by industry and has been supported by the Department of Industry and the British Standards Institution. (eij)
SPB/17 (MACH EQPT 1)			BS1870 (Safety footwear)	
SPA/14 (PS3)			BS5169 (Fusion welded air receivers)	
SPB/23 (GEN4)			BS5426 (Workwear)	
SPB/24 (GEN5)			BS5240 (Safety helmets)	
SPB/22 (GEN7)			BS697 (Rubber gloves)	

(f) **Flammable substances**

Existing controls over the manufacture, storage and use of flammable substances do not apply to all work activities. They are outdated and are inconsistent when matched against the level of risk. Furthermore, they are incomplete, particularly in relation to flammable gases (including oxygen).

Project number	*Project title*	*Output*	*Objectives*	*Justification*
HSDB/6 (FLAM 1)	Flammable Gases and Oxygen Regulations	Regulations, approved code of practice, guidance note	To replace existing legislation with controls which apply at all work activities where flammable gases, including oxygen, are handled.	Existing controls apply only to specific gases in very limited circumstances. Furthermore, there are few controls concerning oxygen. The hazards of flammable gases and oxygen have been forcibly demonstrated by a number of recent incidents. (cdgi)
HSDB/9	Flammable Liquids Regulations	Regulations, approved code of practice, guidance note	To replace existing limited legislation concerning flammable liquids with controls which apply at all work activities and which are better matched to the level of risk.	Existing controls only apply at factories, or at premises where petroleum spirit is stored. These regulations will apply to all work activities and ensure the standardisation of safe practices in relation to the storage and use of flammable liquids. (cgi)

(g) **Other topics**

Project number	*Project title*	*Output*	*Objectives*	*Justification*
SPA/6 (PS 1)	Pressurised systems	Regulations, approved code of practice, guidance note	To replace existing outdated legislation concerning pressurised systems with comprehensive and flexible controls which are matched to the risks and which are applied to all work activities.	Existing legislation relating to pressurised systems only applies at a limited number of workplaces; furthermore it is outdated and undesirably restrictive. (cghi)
HSDA/20 (CONV 2)	Conveyance by Road of Dangerous Substances (other than Explosives and Radioactive Substances) as Packaged Goods Regulations	Regulations	To extend the provisions of the Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 to packaged goods to minimise hazards during their transportation.	The Secretary of State for Transport has given undertakings that the proposed controls will be introduced. The public's concern over materials transported in road tankers extends to packaged goods which not infrequently cause serious disruption of traffic and necessitate attendance by emergency services who may be exposed to risk. (cdj)

Project number	*Project title*	*Output*	*Objectives*	*Justification*
SPB/16	Manual handling	Regulations and guidance note	To reduce the heavy incidence of injuries caused by manual handling.	Manual handling accidents account for 20% of all accidents reported to HSE. Parliament and trade unions are pressing for the legal position regarding manual handling to be regularised. (bcehi)
RPDA/6	Enforcing Authority (Amendment) Regulations	Regulations	To transfer the enforcement of health and safety legislation at certain premises from HSE to local authorities.	This project results from an agreement made with local authorities and gives enforcement responsibilities to local authorities at certain specified types of premises, many of which are already visited by their inspectors for reasons of public health. (g)
SPB/18	Revision of Notification of Accidents and Dangerous Occurrences Regulations 1980	Regulations	To ensure enforcing authorities receive adequate information concerning occupationally related accidents to enable them to perform their duties.	Revision of the regulations is required because the forthcoming changes in industrial injury benefit will impair the quality of accident and disease information passed to HSE from DHSS. (j)

2 Work associated with long-term hazards

The purpose of this work is to ensure adequate control over those agents such as carcinogens, noise, etc., which may only manifest themselves as causes of chronic or even fatal illness a considerable time after exposure which may be brief or prolonged. Although the initiative for the projects described below may have originated in the UK, much of it is being developed to harmonise with existing and anticipated EC Directives. They represent work on two broad fronts:

(a) Information

It is an essential part of our strategy with respect to hazardous substances used at work that there should be adequate information available concerning their nature and associated hazards. The level and type of information which should be made available will, of course, depend on the reason it is required. We have already produced regulations on the notification of new substances which provide us with a central register of information enabling us to monitor more closely the ever-increasing number of substances used at work and to identify more rapidly potential hazards. In this legislative programme our work is directed towards the information needs of users of dangerous substances and of the emergency services.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
HSBD/1 (CPL 2)	Classification, packaging and labelling of dangerous substances	Regulations, approved code of practice, guidance note	To extend existing legislation (SI 209/1978) so that dangerous substances are properly sealed and labelled when supplied and conveyed by road, and so that users and emergency services have hazard information.	While required to implement an EC Directive, these regulations will rationalise existing legislation. Industry will also benefit from harmonisation with international standards reducing trading barriers. (cfgj)

(b) Development of controls

The existing controls over hazardous agents, such as toxic materials, noise and ionising radiations are contained in a large number of disparate statutory provisions which are very restricted in their application and coverage, and are not necessarily in keeping with modern technology. It is our intention to replace these with up-to-date, coherent legislation and guidance which will apply at all workplaces. A major item of work on which we are engaged but which we are unikely to complete during this planning period is the preparation of regulations and guidance on the control of substances hazardous to health. These will apply to the majority of such substances; we recognise, however, that some very specific substances, such as asbestos, may best be treated by separate but parallel controls.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
HSDD/1 (TOX 12)	Regulations to control: (1) Exposure to asbestos of persons at work (2) Marketing and use of asbestos	Regulations, approved code of practice, guidance note	To reduce the incidence of disease resulting from exposure to asbestos by updating and extending the coverage of legislation concerning asbestos.	This work implements recommendations of the Advisory Committee on Asbestos for new legal and administrative controls on asbestos at the workplace. In addition, new legislation will be required to implement EC Directives which we are negotiating on the protection of workers exposed to asbestos, and the marketing and use of asbestos. (cdefhj)
HSDD/5 (TOX 3)	Asbestos insulation and coatings: (1) Asbestos (Licensing) Regulations (2) Asbestos (Prohibition) Regulations	Regulations	To reduce occupationally and non-occupationally induced disease following exposure to asbestos by licensing contractors working with asbestos insulation and coatings, and by prohibiting the new application of asbestos by spraying, the use of asbestos in certain insulation products, and the use of crocidolite and products containing it.	These regulations will implement recommendations of the Advisory Committee on Asbestos. HSC recognise the well-founded concern about asbestos and have decided to proceed in advance of proposed EC Directives. Licensing will facilitate the enforcement of controls, and the prohibition regulations will ensure that alternative materials are used. (cdehi)
SPE/2 (ION 1)	Ionising Radiations Regulations	Regulations, approved code of practice, guidance notes	To ensure the safety of all persons where work with ionising radiations is undertaken.	This project is required to implement the Euratom Directive on basic standards of radiological protection. Existing controls only apply at a limited number of workplaces. The proposed regulations will apply to all persons at work and will allow rationalisation desired by industry. (cfhi)
To be assigned (AG 1)	Amendments to the Health and Safety (Agriculture) (Poisonous Substances) Regulations 1975	Regulations	To further safeguard agricultural workers using chemicals by extending and modifying existing regulations, taking into account modern chemicals and protective methods.	Poisoning of agricultural workers continues to occur regularly and is of great concern to HSC. These regulations are required because a number of chemicals have been dropped or introduced since 1975. Furthermore, there have been significant advances in protective clothing. (cgh)
To be assigned (GEN 8)	Health and Safety (Emissions into the Atmosphere) Regulations	Regulations	To ensure modern developments and new processes are reflected in industrial air pollution legislation.	Work in recent years has produced new developments in air pollution control and new information concerning the toxicity or polluting potential of various substances. The proposed regulations would take advantage of these advances. They would also amend the Lists of Scheduled Works and Noxious or Offensive Gases, as suggested by a review of the role of central and local government in air pollution control. (bcdhi)

3 Work associated with hazards of a catastrophic nature

There is justified public, governmental and international anxiety concerning those operations which are sufficiently hazardous that in the event of an accident or failure there might be a catastrophic outcome. Major hazards of this type present us with a continuing need to assess them and, where necessary, to provide legislative control such as the regulations listed below. Such regulations are not, however, the main thrust of our work in this area; much of our effort continues to be directed towards research, assessment and the provision of advice and information, tasks which form significant parts of the work programmes of the inspectorates, RLSD and the Hazardous Installations Group.

Project number	*Project title*	*Output*	*Objectives*	*Justification*
HIPB/1 (MH1)	Regulations implementing the EC 'Seveso' Directive on the major accident hazards of certain industrial activities	Regulations, guidance note	To ensure that for installations handling highly toxic substances or larger quantities of hazardous substances there are: (i) a safety case (ii) emergency plans (iii) information available to the public who may be affected.	These regulations complement those requiring the notification of such installations. Although required to implement the 'Seveso' Directive, they stem from a domestic policy decision following enormous public concern about the serious consequences of accidents such as those at Flixborough and Seveso and may therefore extend the scope of the Directive. (cdfhij)
HSDA/21 (CONV 3)	The control of dangerous goods in ports	Regulations, approved code of practice, guidance note	To reduce the possibility of large-scale accidents as a result of the passage and handling of large quantities of dangerous substances through and in ports.	Dangerous substances are handled in increasing quantities in ports. Overseas experience has indicated an increasing risk of serious accidents. Present controls in British ports are not sufficient to deal with these hazards. (cdg)

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